Mini Dissertation

Intimate Femicide-Suicide in South Africa: The Epidemiology of Male Suicide following the killing of an Intimate Partner.

By

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In partial fulfillment of a Masters Degree in Public Health,

University of Cape Town

February 2005

Declaration

I, Shanaaz Mathews, hereby declare that the work which this Mini Dissertation is based on is original and that neither the whole not any part of it has been or is being submitted for another degree at this or any other university.

Signed

Signature removed

Date

2 June 2005

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Acknowledgements

This study was undertaken as part of my work within the Gender & Health Unit at the Medical Research Council and was made possible through the support of my colleagues.

I would like to thank the following:

My supervisors, Dr. Naeema Abrahams, who supported me through all the trials and tribulations of the study and selflessly provided me with direction and advice while writing this dissertation. Dr. Catherine Mathews for her diligent guidance and support which enabled me complete this piece of work. I am also immensely grateful to Dr. Rachel Jewkes for her willingness, to share her wealth of knowledge and intellectual guidance.

A special thanks to the Department of Health and the South African Police Service who provided us with access to their records and to the police officers for their willingness to be interviewed and to share information.

We should not forget the women who lost their lives and contributed to building our knowledge through this study.

Lastly, to my husband and children for all their love, patience and unconditional support.

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Abstract

The few studies on intimate femicide-suicide have mainly been conducted in developed countries. These studies have found that a disproportionate number of male partners commit suicide after killing their female partner. However, not much is known about intimate femicide-suicide in developing countries.

The purpose of this study was to describe: the incidence and patterns of intimate femicide-suicide in South Africa and to compare the factors which distinguish intimate femicide-suicide from cases in which the perpetrator does not commit suicide. The study was designed as a retrospective national mortuary based study of all female homicides where the victim was aged 14 years and older for the year 1999. Data was collected from a stratified cluster sample of 25 mortuaries in South Africa. National incidence rates and factors associated with perpetrator suicide were derived by taking into account the stratification and weighting of mortuaries.

This study found that 19.4% of intimate femicide perpetrators also commit suicide within a week of the murder. The estimated rates for intimate femicide-suicide were 1.7/100 000 women 14 years and older and 2.1/100 000 males 14 years and older. A logistic regression analysis to compare the factors which distinguish intimate femicide-suicide from cases in which the perpetrator does not commit suicide shows that perpetrator suicide were associated with: the perpetrator

being of White race; employed as a professional or white collar worker; and owing a legal gun.

The study findings have shown that South Africa has the highest reported rate for intimate femicide-suicide in the world. This poses an important public health problem. Unraveling the factors associated with perpetrator suicide after killing an intimate partner is complex. However, legal gun ownership plays a significant role in such killings. It is therefore imperative that access to guns be controlled and monitored.

Chapter One

Introduction and Literature Review

1. Introduction

South Africa is described as a very violent society, with homicide being one of the leading causes of death (Matzopoulos et al 2004). The rate of homicide in South Africa was estimated at 55.3 per 100 000 population in 1999 (Crime Information Analysis Centre 2003). In comparison, data show that homicide rates were much lower in the USA in 1998 (10.5 per 100 000), likewise in Columbia (29.8 per 100 000). Yet both these countries are considered to be particularly violent societies (Dahlberg & Krug 2002).

Globally perpetrators of female homicides are predominantly men. Women who are murdered are more likely to be killed by an intimate partner than men (Mercy & Saltzman 1989, Kellerman et al 1993 and Adinkrah 1999). Studies in developed countries have found that between 40 – 70% of all female homicides are perpetrated by an intimate partner[1], someone normally thought of as the one to love and protect her (Heise & Garcia-Morena 2002). This phenomenon is referred to as intimate femicide. Studies on intimate femicide in developed countries have found that a disproportionate number of male partners commit suicide after killing their female partner (Koziol-McLain et al. in press).This phenomenon is known as intimate femicide-suicide.

[1] Intimate Partner: Refers to either a current or ex legal, cohabiting or dating partner.

In South Africa, gender-based violence is an important feature of intimate relationships (Jewkes 2000). Scientific research in the area of intimate partner violence is emerging in South Africa. The prevalence of lifetime intimate partner physical violence in South Africa has been estimated to range somewhere between 19.1% – 28.4% based on a population-based study of women in three provinces (Jewkes et al. 2002). Studies on sub-populations report higher rates. A study of women attending antenatal clinics in Soweto found that 55.5% of women reported having experienced physical /sexual violence by an intimate partner ever in their lifetime (Dunkle et al. 2004). In a study with men working at three Municipalities in the Western Cape, 43% reported abusing an intimate partner over the past 10 years (Abrahams et al. 2004). Studies in developed countries have shown that intimate partner violence precedes the majority of intimate femicide cases (Arbuckle et al. 1996, McFarlane et al. 1999; Moracco et al.1998 and Campbell et al. 2003), but little is known about the antecedents of intimate femicide in South Africa.

The public health impact of intimate partner violence is enormous. It transcends the individual level, impacting on the family and community. Thus far the public health impact of intimate partner violence has mainly been described in terms of the associated morbidity among women while less is known about the impact on their children and families. This has been well summarised by Campbell (2002) who depicts the wide range of long term health consequences suffered by women. Although intimate femicide is construed as the most extreme form and

consequence of intimate partner violence, this premature mortality of women and its public health impact has not been explored in South Africa. Intimate femicide may be an important indicator of levels of gender based violence within South African society.

Theories on intimate femicide-suicide propose that this phenomenon is linked to male possessiveness and jealousy, while the more traditional explanation focus on the psychological state of the perpetrator which can be linked to relationship stresses and psychological factors (Cooper & Eaves 1996; Dawson & Gartner 1998; Marzuk et al. 1992). There are few international studies that primarily focus on intimate femicide-suicide and none have been conducted in a developing country, including South Africa. Yet, the suicide of the male perpetrator following intimate femicide poses a double mortality burden, with an immense impact on family, friends and the community.

Globally suicide poses a major public health problem with the WHO reporting that approximately 1 million people had died as a result of suicide in 2000 (DeLeo et al. 2002). The global average rate of suicide is estimated at 16 per 100 000 (DeLeo et al. 2002), very similar to that of South Africa where it is estimated to be 17.2 per 100 000 (Schlebusch 2004). Studies from developed countries have also explored the related phenomenon of homicide-suicide (where an individual, male or female, commits a homicide and shortly thereafter commits suicide) with over 90% of these perpetrators being male (Marzuk et al. 1992; Felthous &

Hemple 1995). The majority of homicide-suicide victims are females killed by their male intimate partners (Marzuk et al 1992 and Easteal 1994). Homicide-suicide rates across countries are fairly constant ranging between 0.20 – 0.30 (Marzuk et al 1992 and Felthous & Hemple 1995).

Developing an understanding of intimate femicide and related perpetrator suicide is important for public health in South Africa as no such research has preveiously been undertaken. With such an understanding appropriate strategies could be designed to deal with intimate partner violence, to reduce the incidence of intimate fernicide and to develop appropriate strategies to deal with its consequences. A national study was conducted to describe the epidemiology of female homicide in South Africa with a focus on establishing the size of the problem, the legal outcome of cases and the injury patterns (Mathews et al. 2004). This dissertation will be focusing on a sub-analysis of this broader study.

The purpose of this dissertation is to develop an understanding of intimate femicide suicide in South Africa by:

- Describing the incidence and patterns of intimate femicide-suicide
- Comparing the factors which distinguish intimate femicide with subsequent suicide of the male perpetrator and intimate femicide with no subsequent suicide of the male perpetrator.

This dissertation is presented in four chapters:

- Chapter One is a review of literature.
- Chapter Two outlines the research setting and the research methodology used in the study.
- Chapter Three presents the findings of the study.
- Lastly, Chapter Four provides a discussion of the study's findings, a conclusion and recommendations informed by the discussion.

1.2. Literature Review

1.2.1 Definition of Terms

Female Homicide - The unlawful and intentional causing of death of a female person.

Femicide – The killing of a woman by a man because she is female, this is considered to be the most extreme form of violence against women,.

Intimate Femicide (IF) - The killing of a woman by an intimate partner. This includes the woman's husband, boyfriend (dating or co-habiting), ex-husband (divorced or separated) or ex-boyfriend, same sex partner or a rejected would-be lover.

Non-Intimate Femicide (nonIF) – The killing of a woman by someone other than an intimate partner.

Intimate Femicide-Suicide (IF-S) – An intimate femicide followed by the suicide of the perpetrator within a week of the homicide.

Intimate Femicide- Non Suicide (IF-nonS) – The killing of a female by her intimate partner without subsequent suicide of the perpetrator.

Homicide-Suicide - An individual, male or female, commits a homicide and shortly thereafter commits suicide

1.2.2 Intimate Partner Violence in South Africa

Intimate partner violence is widely documented as one of the most common forms of gender based violence. It has a significant public health impact (Campbell 2002; Heise & Garcia-Morena 2002; Mathews et al. 2004). In South Africa the lifetime prevalence of women experiencing physical violence is estimated to be between 19 -28% in an intimate relationship. This is based on a population-based study in three provinces (Jewkes et al. 2002). Studies of community sub samples report higher prevalence's of between 43 -50% (Dunkle et al. 2004; Jewkes et al. 2002). These high levels of intimate partner violence, in combination with excessive rates of homicide, raise concerns about the levels and patterns of intimate femicide in South Africa.

1.2.3 Contextualising Female Homicide

International studies on homicide indicate that there is a gendered pattern with the rate of homicide lower for women than for men (Goetting 1998). This is supported by the National Injury and Mortality Surveillance System (NIMSS) in South Africa, which reports that seven men were killed for one woman in 2000 (Matzopoulos 2002). However, studies are showing that when women are killed

they are more likely to be murdered by a man (Gartner et al. 2001; Mouzos 1999). Perpetrators of female homicide are more often known to the female victim, whereas men are more likely to be killed by a stranger (Humphrey 1981; Kellermann & Mercy 1992). The World Report on Violence and Health (Dahlberg & Krug 2002) shows that between 40 -70% of all female murders in the predominantly developed countries for which there is data, are perpetrated by a male intimate partner (Heise & Garcia-Morena 2002).

These studies show that women are most likely to be killed in their own home (Humphrey 1981; Moracco et al. 2003; Mouzos 1999). This is supported by the NIMSS data on South Africa (Matzopoulos 2002). Similarly, the MRC female homicide study has also shown that 68% of women are murdered in their own home (Mathews et al. 2004).

1.2.4 International Studies on Intimate Femicide

1.2.4.1 Methods used in International Studies

Globally few national intimate femicide studies have been conducted. Where studies have been carried out, they have predominantly been in developed countries. Research methods used ranged from descriptive case studies, surveillance studies to case-control studies. Crime data bases have predominantly been used in these studies, but they have limitations which include the misclassification of cases, incomplete information and missing data, all threatening the reliability of findings (Dobash et al 2004; Paulozzi et al. 2001)

Studies designed to establish the incidence of intimate femicide, have primarily been surveillance studies utilizing data from national homicide databases and supplemental homicide reports (Adinkrah 1999; Campbell et al. 2003; Dobash et al. 2004;Landau & Rolef 2001; Mouzos 1999; Puzone 2000; Shackelford & Buss 2000; Wilson & Daly 1993; Wilson, Johnson, & Daly 1995) See Table 1a. Other studies focused on developing an understanding of the phenomenon of intimate femicide. They were predominantly descriptive, using cases studies or case series data (Adinkrah 1999; Landau & Rolef 2001).

Risk factors have primarily been explored through the use of a case control design. Cases were mainly identified through homicide databases, while controls were selected based on their exposure to a violent intimate relationship identified through their contact with service organizations or identification via random telephonic calls or in violence against women survey data (Campbell et al. 2003; Wilson et al. 1995). A study by Campbell et al. (2003) used proxy informants of women killed by an intimate partner as "cases" while the "controls" were women who had reported intimate partner violence in 11 cities across the USA. This case control study has probably yielded the best data for risk factor analysis to date.

Table 1(a): International Studies on Female Homicide & Intimate Femicide

Country	Author/s	Design	Study Objective	Data Source & Sample	Findings
USA, North Carolina	**Humphrey et al 1981**	**Surveillance Study**	To examine trends in proportions of male and female homicides	The study analysed routine data collected by the Office of the Chief Medical Examiner for 5 years (1972 -1976). N = 912 The study only focuses on female homicides and does not explore victim perpetrator relationship.	**Female Homicide Rate** * 1972: 6.9 per 100 000[2] * 1976: 5.9 per 100 000 * Comparing the male-female homicide ratio a declining trend is noted for the five year period with the disparity between the proportion of male and female homicides decreasing.
USA	**Mercy & Saltzman 1989**	**Population based Surveillance study**	To examine patterns and trends of homicide between married partners	This study used routine data from FBI Supplemental Homicide Reports for 10 yrs (1976 -1985) N = 16 595 The sample includes both males and females who are killed by a legal spouse, divorced couples were excluded from the study	**IF[3] Rate** * Spouse homicide rate 1.6 per 100 000 married persons **Risk Factors** * Wives are at 1.3 times the risk of being killed by a spouse than husbands * The risk of being killed was greater for those in interracial marriages than intra-racial marriages *The risk of being killed increased as the age difference between spouses increased
USA	**Kellermann, et al 1993**	**Case Control Study**	To identify risk factors for homicide (male & female) in the home	Three counties were included in the study (Shelby County, King County & Cuyahoga County). **Cases:** All homicides occurring in Shelby County & King County between August 23 1987 and August 23 1992 (5 year period) were reviewed to identify those occurring within the home. In Cuyahoga County homicides which occurred in the home for the period January 1 1990 to August 23 1992 were reviewed. In addition to data collected from police case files cases were followed-up with proxy informants for the victim. **Controls:** Controls were matched for sex, race, age range and neighbourhood. n = 420 (cases) * 405 proxies identified (96.4%) – response rate ranging from 93.0% - 99.0% in each county. Interviews with a matching control were obtained for 99.7% of cases.	**Associated Risks:** *Case households had a history of family violence and illicit drug use * Gun ownership was strongly associated with increased risk of homicide in the home (OR 2.7). * At greater risk of being killed by a family member or intimate partner

[2] Denominator for rate calculation not specified
[3] IF refers to in this study Spousal Homicides

Country	Author/s	Design		Data Source	Findings
Canada, Australia (New South Wales) & USA (Chicago)	**Wilson & Daly 1993**	**Surveillance Study**	* To assess the association between marital estrangement and homicidal risk	**Canada:** Police submissions to a national homicide data base (1974 – 1990) n= 1748 (1333 wives & 415 husbands) **NSW:** Police reports maintained by the NSW Bureau of Criminal Justice Statistics (1965 –1990). n = 398 (303 wives, 95 husbands) **Chicago:** Police records (1965-1990) n = 1758 (875 wives, 883 husbands) Analysed routine data collected for every case during the study period Information on duration of separation limited due to the nature of data collected.	**Rate of IF:** - Chicago – 6.5 / 100 000 married persons - NSW – 3.5/ 100 000 married persons Canada – 4.0/ 100 000 married persons **Risk Factors** * Women are most at risk just after they have left, or threaten to leave, their partner compared to co-residing
Canada	**Wilson et al 1995**	**Case-Control Study**	* To establish demographic patterns of risk of lethal and non-lethal violence against wives (registered and common law unions) in Canada	**Cases:** Statistics Canada's Homicide Survey (1974 –'92) n = 1429 wives killed by the husbands for this period **Controls:** Violence against Women Survey (1993) – Out of 8385 interviews – n= 277 had been abused by a husband within the past 12 months.	**Rate of IF** 1 / 100 000 females **Risk Factors** * Common law unions at increased risk of IPV & IF * IF rates increase as age disparity between partners increase * Proposed a framework: male sexual proprietariness and coercive control of wives
USA New Mexico	**Arbuckle et al 1996**	**Surveillance Study**	To define the contribution of domestic violence to female homicide in New Mexico and to compare IF and non-IF (the focus was on female homicide).	The study analyses routine data collected by the state office of the medical examiner for all female homicides from 1990 to 1993. Intimate Femicide included both current and former male intimate partners N= 134 female homicides, with n= 62 cases (46.0%) IF	**IF Rate** * Overall Female Homicide rate: 4.3 per 100 000[4] * IF rate: American Indian/ Alaska Natives: 4.9 per 100 000[4] Hispanics: 1.7 per 100 000[4] Non-Hispanic White: 1.8 per 100 000[4] **Associated Risks** * Firearms were more than 2 times as likely to be used in the killing compared to nonIF homicides (RR 1.8). * 35.5% of IF had previously documented injuries (RR 4.3) * Less IF had a been sexually assaulted before death (RR 0.15)
Australia	**Mouzos 1999**	**Surveillance Study**	* To establish trends in female homicide in Australia * To develop an understanding of the context of femicide	Study analysed data from the National Homicide Monitoring Programme. *Data analysed for a 9 yrs (1 July 1989 – 30 June 1998). * N = 3045 (1913 = females & 1125 = males, 7= gender unknown)	**Female Homicide Rate** * The study does not establish an IF rate, but only a female homicide rate *1.4 / 100 000 in population * Female homicide rate at its highest between 21-23 yrs – 2.8 per 100 000 population **Risk Factors associated with Female Homicide** * Female victim not working * Male perpetrator not working * Victim and perpetrator in an intimate relationship * Incident occur in a private home

[4] Denominator for rate calculation not specified

Country	Author/s	Design		Data Source	Findings
USA **North Carolina**	**Moracco et al 1998**	**Population based Surveillance Study**	To examine the epidemiology of femicide by describing its patterns, precursors and potential risk factors.	This study combines data from medical examiner records and interviews with police on femicide cases aged 15 years and older between 1 January 1991 and 31 December 1993. N = 586 Intimate partner femicide n= 293	**IF Rate** * Overall female homicide rate: 6.9 /100 000 women 15 years and older * No IF rate established **Years of Life Lost** 42.6 years per homicide Intimate Partner Femicide = 50.0% of all femicides for the period **Associated factors** * Two thirds of IF were known to be victims of domestic violence * Where a history of DV was known 54.1% had contact with the police 12 months prior to the killing. * 42.0% of IPF occurred after the women threatened to leave, attempted to leave / separated * Victims were found to be significantly younger, married, killed at home and killed in murder-suicide, with guns, and less likely to be drug related.
Fiji	**Adinkrah 1999**	**Descriptive Study**	To examine intimate femicide in a non-western society	The Study used data for an 11 year period (1 January 1982 – 31 December 1992). Routine data collected by the Murder & manslaughter register of the Fiji Police Force was combined with supplementary data obtained from newspaper reports and interviews with police & criminal justice personnel. N = 29 (25 females & 4 males).	**IF Rate** ***No IF rate was established** *Husbands are 6 times more likely to kill a spouse compared to wives killing their husbands. **Factors associated with Spousal Homicide in Fiji** *Tradition and culture perpetuate male domination and domestic violence via patriarchy *Sexual jealousy & infidelity are the most common precipitating factors
USA	**Mcfarlane et al 1999**	**Survey**	To describe the frequency and type of intimate partner stalking that preceded attempted and actual partner femicide	The sample was drawn from closed police records from 10 US Cities for the period 1994-1998. N = 206 (141 femicides & 65 attempted femicides) Proxy informants were contacted with femicide cases while attempted femicide victims were approached to participate in the study. * 18 item survey was used to determine frequency and type of stalking	**Risk Factors:** * 76.0% of femicides and 85.0% of attempted femicide victims had experienced stalking within 12 months of the attempted or actual killing. * Most frequent type of stalking was spying * Former partners more likely to stalk than current partners
USA	**Shackelford et al 2000**	**Surveillance Study**	To establish whether reproductive age is a special risk in intimate femicide cases	This study used the FBI Homicide data base and supplemental homicide reports (1976 – 1984) N= 13 670 * Focused on men who killed their legal wives.	**IF Rate** 20-24 years: 3.6/100 000 married women per annum, which is 1.5 times higher than women aged 25 -29. **Associated Factors** *Younger women are at increased risk of being killed by an intimate partner compared to older women. *This is not exclusively linked to being married to young violent men, but linked to men viewing their intimate partner as their property

Country	Author/s	Design	Study Objective	Data Source & Sample	Findings
USA	**Puzone et al 2000**	**Surveillance Study**	To describe trends in Intimate Femicide in USA and to explore possible explanations for this	The study analysed routine FBI Uniform Crime Reporting System – Supplemental Homicide report data (1976 to 1995) 20 year period. * Focus on 29 USA states N = 80 027 * Study strength: used denominator data specific to the population at risk * Limitation to the study is the amount of missing/ unknown data – particularly for victim perpetrator relationship and underreporting of homicide cases.	**IF Rate** Wife – 1.05/100 000[5] Girlfriend - 1.06/ 100 000[5] 34.0% of adult women (18 yrs and older) were killed by an intimate partner (n = 26 926). * Study findings support previous studies showing a decrease in intimate partner homicide rates (1977 -1995), with male homicide rates decreasing more rapidly than female homicide rates. * Hypothesise that the increase in age of first marriage may explain the overall decrease in homicide rates.
USA	**Paulozzi et al 2001**	**Surveillance Study**	To describe the risk for Intimate Femicide using demographic variables	This study used the supplemental homicide reports of the FBI's uniform crime reporting system for all Intimate Partner homicides between 1981 -1998. This study included homicides where the victim was ≥ 10 yrs old. N = 45 513 (weighted figure)	**IF Rates** * 1.43 / 100 000[5] **Associated Risks** *Rates for female IF exceed rates for male except for blacks *Rates for IF were highest amongst blacks *Rates were highest amongst women aged 20- 49 years. *Rates of IF decreased for both males and females over the study period
Israel	**Landau & Rolef 2001**	**Descriptive study**	To describe the temporal distribution, representation of population groups and the motives for Intimate Femicide	Data collected by a special parliamentary committee of Inquiry for the investigation of the killing of women (1990 -95) from police records, court files & newspapers N=76	**IF Rate** * 0.25 / 100 000 per population * The rate decreasing from 0.3 to 0.2 per 100 000 population for the 5 year period **Population Distribution** *25.0 % of IF occurs among non-Jews: this is an over representation within this population (Muslim-Arab) group. **Associated Factors** Possessiveness and arguments most common motives
USA	**Sharps et al 2001**	**Case Control Study**	To examine alcohol use by victims and perpetrators as a risk factor for IPV and femicide	Data collected as part of a larger study 11 city study (see below). This study included femicide/attempted femicide victims and perpetrators (n = 380), abused control victims and perpetrators (n=384) and non-abused controls (n=376) for a total sample (N= 1140).	**Risk Factors:** * Perpetrator problem drinking was associated with an 8 fold increase IPV * Perpetrator problem drinking associated with a 2 fold increase in the risk for IPF/ attempted femicide. * Prior abuse assessed by using the a modified Conflict Tactic Scale * Problem drinking was assessed using the Alcohol use disorders identification test (AUDIT)

[5] Denominator for rates calculation not specified

Country	Author/s	Design		Data Source & Sample	Findings
USA **11 Cities**	**Campbell et al 2003**	**Case Control Study**	To identify risk factors for intimate femicide among women in violent relationships	Data from 11 Cities were used. **Cases**; Consecutive intimate femicide police or medical examiner records from 1994 - 2000 were examined to assess victim perpetrator relationship followed with an interview of a proxy informant. Of 545 cases only 68% of proxies were identified with only 307 proxies agreeing to be interviewed n= 373 . **Controls** were selected via stratified random digit dialing and a woman who was abused by an intimate partner during the past two years was identified. The Conflict Tactic Scale was modified, adding stalking items to identify abuse. n = 356 * The low proportion of proxies identified could result in selection bias impacting on the validity of study findings.	**Associated Risk factors:** * 70.0% of femicide victims had a history of physical abuse *Perpetrators access to a gun *Previous threat with a weapon *Perpetrator's step-child in the house * Estrangement
USA **North Carolina**	**Moracco et al 2003**	**Population based Surveillance Study**	To examine the epidemiology of femicide by describing its patterns, precursors and potential risk factors.	Sub analysis of a larger study (Moracco et al 1998). This study combines data from medical examiner records and interviews with police on femicide cases aged 15 years and older, between 1 January 1991 and 31 December 1993. N = 586 IF n= 293	**IF Rate:** * 3.46 / 100 000 women aged 15 and older * 50.0% of all female homicides for the study period. **YLL:** 43.1 per woman killed **Associated Factors:** * 80.0% of women killed in their home * 66.0% of women killed by a gun * 46.0% of women killed by a married partner * 15.6% killed by a former partner * IPV noted in two thirds of cases
United Kingdom	**Dobash et al 2004**	Case-Control Study	To compare two types of murders: men who kill other men and men who kill their intimate female partners exploring the conventionality of these two groups.	Data was gathered from the National Homicide Indexes (England, Wales & Scotland), reviewing case files and indepth interviews with a sample of men in prison. **Controls**: Men who murdered other men n = 424 **Cases**: Men who murdered an intimate partner n = 106 * The choice of the control group can bias study outcomes as these two groups start off with differences.	**Factors associated with men who kill their intimate partners:** * Men who kill intimate partners appear to be more conventional i.e. no criminal record, drug abuse etc.. than men who kill other men *Men who kill their intimate partners are more likely to have intimate relationships that have broken down * They are more likely to have used violence in an intimate relationship

Table 1(b): International Studies on Homicide-Suicide & Intimate Femicide-Suicide:

Country	Author/s	Design	Study Objective	Data Source & Sample	Findings
USA Albuquerque	**Rosenbaum 1990**	**Case Control Study**	To determine the role of depression in couples involved in murder-suicide and homicide	Cases and controls were obtained via the files of the Albuquerque police dept. n = 12 cases: murder of a partner followed by suicide – record review of perpetrator hospital records and interviews with relatives and friends n= 24 male & female controls: domestic homicides – record review of pre-trial, trial and post trial report including psychologist's reports & telephonic interviews with relatives. Diagnosis of Depression: DSM III R	* Males= 95.0% of Perpetrators of murder-suicide * 75.0% of male perpetrators were depressed * Perpetrators of homicide were not clinically depressed
USA	**Marzuk 1992**	**Literature Review**	To review the epidemiology, patterns and major determinants of murder-suicide and to identify those most at risk for this type of violence	English language articles Medline (from 1966) Embase (from 1974) In addition articles, books and monographs identified were retrieved and reviewed * Meta-analysis of studies was not conducted.	*Murder-suicide annual incidence over 3 decades of 0.20 – 0.30/ 100 000 population * Most perpetrators were male * Most victims were female * Developed Clinical Typologies for Spousal Murder-Suicide:- Amorous jealousy & Mercy Killings * Murder-Suicide differs from homicide & suicide – neither act incidental planned as a sequential act * 15.0% -30.0 % of perpetrators left notes * Some victims were also stalked
Australia	**Easteal 1994**	**Surveillance Study**	To explore the cause and explanations of homicide-suicide among adult sexual intimates	Data on IF were obtained from the National Homicide Monitoring project (1989 -1991) at the Australian Institute of Criminology Data on all female homicides were obtained from two Australian states (New South Wales and Victoria) via the coroner, court and Dept. of Public Prosecution files. The study gathered data on demographic variables, IPV history, alcohol use, separation& jealousy N = 110 cases	**Associated Factors** * Male estranged from partner * Born outside Australia * Used a gun as a weapon * Older with an ailing wife
Australia	**Milroy C et al 1997**	**Surveillance Study**	To describe the pattern of homicide-suicide in Victoria, Australia	Cases of homicide followed by suicide were identified via the files of the Victoria Institute of Forensic Pathology for a 5 yr period (1985 -1989) N = 39	* Average Murder-Suicide Rate 0.19/100 000 population **Associated Factors** *Perpetrator most often a man killing his female partner * Firearms the most frequent weapon used * breakdown of a relationship was the most frequent reason for killing * Physical ill health and financial stress linked as associated factors particularly in the elderly
Canada (British Columbia)	**Cooper & Eaves 1996**	**Surveillance Study**	To explore the phenomenon of homicide-suicide in familial relationships through furthering the understanding the circumstances under which murder-suicide occur	All cases classified as homicide by the coroner (1984 – 1992) were reviewed and classified into family homicide and was followed-up by reviewing police reports. N = 124 *No rate reported in the study	* 18.0% of perpetrators committed suicide * Suicide only occurred after killing an intimate partner or child * Homicide followed by suicide were mostly linked to male jealously or mental illness

Country	Author/s	Design	Study Objective	Data Source & Sample	Findings
USA North Carolina	**Morton et al 1998**	**Surveillance Study**	To describe the epidemiology of partner homicide-suicide involving female homicide victims, in particular the characteristics of victims and perpetrators, circumstances around the event and to gain an understanding of the impact on the family	Homicide cases were identified via the data base of the office of the chief medical officer in North Carolina (1988 -1992). n = 859 cases of femicide n = 119 (perpetrator suicide)	**IF-S rate:** 5 year period 0.67 – 1.06 / 100 000 women *24.0% of men who kill their partner commit suicide **Associated Factors** * Separation most prevalent precursor (41.0%) * History of DV 29.0% of cases * Children witnessed 43.0% of incidents
Canada Ontario	**Dawson & Gartner 1998**	**Case Control Study**	To determine whether traditional explanations of femicide-suicide adequately distinguish the types of femicide-suicide and to explore circumstances of femicide-suicides using the hypothesis of male proprietry	Data used from a study on Intimate Femicide in Ontario (1974 -1994), 21 year period. N = 705 IF cases n = 220 IF-S Controls selected for both victims and perpetrators.	* 31.0% of the IF committed suicide **Associated Factors** *Risk of IF-S increases if a gun is used, if more than one victim is killed *Risk for perp IF-S decreases – when the perpetrator has a criminal record & if victim had been drunk or using drugs at the time of the killing *Premeditation was evident in the majority of cases (83%) * Altruism was minimal – i.e. suggestive of Mercy killings in the elderly * Propose that the two types of killers as defined by Marzuk (1992) are similar *Alternative explanation of male sexual proprietariness is able to explain both types of femicide-suicides more adequately.
Canada Quebec	**Bourget et al 2000**	**Surveillance Study**	To assist in the development of a tool for coroners and police with the gathering of specific information that will be of use to clinical researchers	Using data from the Quebec Coroner's Office consecutive cases of domestic violence (1991-1998) were reviewed. N = 145 & n = 58 * Clinical depression was assessed via review of case files by a forensic psychiatrist and depression was assessed	**Associated Factors** *Murder-suicide offenders more likely to be men *Estranged from their partner *Used a Fire arm *Majority of offenders suffered from clinical depression
USA California	**Lund & Smorodinsky 2001**	**Case Control**	To determine whether homicide followed by perpetrator suicide differ in important ways from those without suicide	The study examined all intimate partner homicides in California during 1996. Data for the study on intimate partner homicides were obtained from State of California Dept. of Justice – Homicide data file, newspaper clippings, police case records and telephonic interviews with homicide investigators. N = 186 n = 74	* 40.0% of perpetrators committed suicide **Associated Factors** *Firearms and victim race important predictors of perpetrator suicide *Demographics of IF-S perpetrators were more like the demographics of persons who commit suicide in the general population than those who do not. *IF-S compared to IF-nonS have different characteristics therefore possibly distinct etiologies
USA	**Kozoil-McLain, J et al In Press**	**Case Control**	To identify risk factors for the killing of women by men who then take their own lives.	IF-S cases were analysed as a sub-group within an 11 USA city case control study on femicide risk factors. (see Campbell et al 2003 in Table 1a) N = 310 n= 100	* 32.0% of IF were followed by partner suicide. **Associated Factors** * Use of gun in the event * Trigger events jealousy & separation * Perpetrator factors; alcohol & drug use, stalking, choking and increased severity and frequency of physical violence.

1.2.4.2 Rates of Intimate Femicide

Most rates are calculated for overall female homicide while other rates reflect specific groups such as wives (see Table1a). The few studies that reported rates of intimate femicide found a range from: 0.25 per 100 000 in Israel (Landau & Rolef 2001) to 1.02 per 100 000 in Canada (Gartner et al. 2001) and 1.6 per 100 000 in USA (Puzone 2000). Fiji is the only developing country where spousal homicides have been researched. A limitation of this study is the fact that although cases were systematically collected over a specified period of time, no intimate femicide rate was established. The author however explored the associated factors of spousal homicide and proposed that such killings were most commonly linked to notions of sexual jealously and infidelity linked to cultural norms such as patriarchy (Adinkrah 1999).

1.2.5 Rates of Intimate Femicide in South Africa

Until the National Female Homicide Study conducted by the Gender and Health Group of the Medical Research Council in June 2004 incidence rates for intimate femicide in South Africa were unknown. The National Female Homicide Study is the first study in South Africa to describe the incidence of intimate femicide (Mathews et al. 2004). This dissertation is a sub-analysis of the broader National Female Homicide Study and focuses on developing an understanding of intimate femicide suicide in South Africa. The only other South African research on this subject was conducted as a pilot study in Gauteng by a non-governmental organization, People Opposing Women Abuse (POWA). This study reviewed

newspaper reports and inquest court records in the Gauteng area for 1993 – 1995. It concluded that a woman is killed every six days by an intimate partner in Gauteng (Vetten 1996). Despite this limitation of study design this data has been used extensively in awareness raising campaigns in South Africa.

1.2.6 Understanding the factors associated with intimate femicide

Internationally the past decade has seen a slow emergence of published literature on intimate femicide (see Table 1a). These publications have attempted to develop an understanding of intimate femicide with a particular emphasis on spousal homicides (Russell 2001). A limitation for us in South Africa is that these studies were predominantly conducted in developed countries. Yet, the studies provide important insights on the subject.

The body of theory on intimate partner violence is extensive, and beyond the scope of this dissertation. Emerging from this body of knowledge is a framework developed by Canadian criminologists (Wilson et al. 1995) which attempts to provide an understanding of intimate femicide by exploring the behaviour of the male perpetrator. Wilson & Daly (1992) argue that intimate femicide is an extreme manifestation of male sexual jealously and "proprietariness" linked to the notion that the female partner belongs to him. The act of killing the female partner is construed as maintaining control over her, with it being better than losing her to another man, or through separation (Wilson & Daly 1992).

Significant socio-demographic factors have emerged as being associated with intimate femicide. Studies reveal that the age of a woman is an important associated factor in (Mercy & Saltzman 1989; Moracco et al. 1998; Mouzos 1999; Paulozzi 2001, Saltzman et al. 2001; Shackelford & Buss 2000; Wilson et al. 1995). Younger women are at increased risk of being killed by an intimate partner with rates peaking between the ages of 20-25 ((Mouzos 1999; Paulozzi 2001, Saltzman et al. 2001; Shackelford & Buss 2000). An increase in age disparity between couples significantly increases women's vulnerability of being killed by an intimate partner (Mercy & Saltzman 1989; Moracco et al. 1998; Wilson et al. 1995). Race as an associated factor in intimate femicide appears to be of less importance in the USA although Paulozzi et al (2001) found that that there was an increased rate of intimate femicide among African Americans. A study in Israel showed that a higher proportion of intimate femicide occurred among non-jews (Landau & Rolef 2001). Campbell et al (2003) had found that race is not independently associated with an increased risk of intimate femicide. However, intimate femicide has been reported to be more common in interracial marriages compared to intra-racial marriages in the USA (Mercy & Saltzman 1989).

Relationship state (ex/current) and status (wife/girlfriend/cohabiting) were also found to be important factors associated with intimate femicide (Brownridge 2004; Campbell et al. 2003; Moracco et al. 1998; Wilson & Daly 1993; Wilson et al. 1995). Women in common-law relationships have been found to be at

increased risk of being killed compared to women who are married (Wilson et al. 1995). Similar heightened risks of being killed have also been found just after leaving, or threatening to leave, a partner making abandonment a key factor (Wilson & Daly 1993). Stalking by the perpetrator has also been shown to be associated with an increase likelihood of subsequent intimate partner femicide; ex-partners are more likely to stalk than current partners (Campbell et al. 2003; McFarlane et al. 1999).

The association between intimate partner violence and intimate femicide is well established (Campbell et al. 2003; Dobash et al. 2004; Mercy & Saltzman 1989; Moracco et al. 1998; Moracco et al. 2003). A substantial proportion of these victims had previously documented injuries (Arbuckle et al. 1996) and has had contact with the police (Moracco et al. 1998).

Risk factors in violent intimate relationships have also been shown to be significant predictors of intimate femicide (Campbell et al. 2003). Problem alcohol use has emerged as a significant factor associated with both intimate partner violence and, consequently, intimate femicide (Sharps et al. 2001). Gun ownership, and access to guns in the home, has been found to be significantly associated with intimate femicide (Arbuckle et al. 1996; Campbell et al. 2003; Kellermann et al. 1993; Moracco et al. 2003). Gun access substantially increases the risk of the lethality of an assault (Campbell et al. 2003). Previous threats with

a weapon has also emerged a significant factor associated with intimate femicide (Campbell et al. 2003).

1.2.7 Intimate Femicide-suicide

In the few studies that have explored femicide-suicide (the suicide of the perpetrator following the murder), this phenomenon has emerged as closely linked to intimate femicide. A disproportionate number of perpetrators' who kill and subsequently take their own lives are current or past male intimate partners of victims (Campbell et al. 2003; Easteal 1994; Marzuk et al 1992; Milroy et al., 1997). A gap in the knowledge on femicide-suicides was noted as rates for femicide-suicide have only been reported in a North Carolina study(USA) with a range of 0.67 – 1.06 per 100 000 women for a five year period, 1988-1992 (Morton et al. 1998). All other reported rates refer to homicide-suicide which includes the killing of both men and women, and are thus not comparable.

Literature on the underlying factors associated with Intimate Femicide-Suicide is embedded in studies on homicide-suicide, as very few studies focus on this discrete but important subset. The initial work in the area proposed that depression was a key factor associated with couple homicide-suicide (Rosebaum 1990). In a review of published data on homicide-suicide, two subtypes of this phenomenon have been proposed: the first linked to jealousy and possessiveness; and the second to declining health in the older person (Marzuk et al. 1992). A later study of homicide-suicide among sexual intimates found that

both depression and "male proprietariness" were associated factors in cases of femicide-suicide (Cooper & Eaves 1996). Relationship breakdown, in particular estrangement, has been found to be one of the leading factors associated with Intimate Femicide-Suicide (Bourget et al. 2000; Easteal 1994; Koziol-McLain et al in press; Milroy et al. 1997; Morton et al. 1998). Lund & Smorodinsky (2001) in a case control study comparing intimate femicide-suicide to intimate femicide-nonsuicide found that they had different characteristics and therefore possibly had different etiologies.

A limitation of these studies is that information about perpetrators was gathered from surveillance data and no standard measure for depression or jealousy has been used (Morton et al. 1998). Information on jealousy and depression was obtained from coroner, medical examiner reports and newspaper paper articles. A case-control study, using a very small sample (N = 36; 12 cases & 24 controls), explored the role of depression in couples involved in murder-suicide compared to couples involved in homicide (Rosebaum 1990). This study found that 75% of perpetrators who committed suicide were clinically depressed, using psychological autopsies and the DSMIII to measure for depression (Rosebaum 1990). It is however argued that traditional explanations such as remorse, depression and psychopathology of the perpetrator do not explain the gendered nature of intimate femicide-suicide (Dawson & Gartner 1998). More recently emerging theories suggest that "pathological possessiveness" by the male

intimate partner is linked to jealousy and /or paranoia of losing his partner (Dawson & Gartner 1998).

1.2.8 Suicide

Globally suicide poses a major public health problem with a global suicide rate of 14.5 per 100 000 (DeLeo et al. 2002; Morton et al. 1998). Male suicide rates generally exceed female rates with a ratio of 3:1 (DeLeo et al. 2002). There is a lack of published data on suicides in South Africa. This is due to the paucity of reliable mortality data with publications only starting to appear from the late 1990's (Schlebusch 2004; Scribante et al. 2004).

NIMMS reported that suicide accounts for 10% of all unnatural deaths in South Africa for the year 2001. This highlights the significant public health impact of suicides in this country (Matzopoulos 2002). The same study found a male - female ratio of 4.7:1 for 2001 (Matzopoulos 2002). The only suicide rates reported for men is by race group and it ranges from 33.1 (Whites), 11.1 (Coloured) to 17.3 (Indians) per 100 000 population with no reported rate for the Black Africans (Flisher et al. 2004). This is due to incomplete data in this group (Flisher et al. 2004). Disaggregated suicide rates by age suggest that suicides are concentrated in the younger age groups except in the white race group where an increase in suicides in the 55+ age group is found(Burrows et al. 2003;Flisher et al 2004). The reported figures on suicide in South Africa may be

an underestimate due to underreporting of suicides and due to the hidden nature of certain forms of suicides i.e. poisoning deaths (Schlebusch 2004).

The psychiatric literature suggests that there is an association between depression and chronic or acute "stress" and suicide in South Africa (Schlebusch 2004; Wassenaar et al. 2000). Stress, in particular, is proposed to be related to interpersonal conflict and family problems (Schlebusch 2004). It is thought that the risk of suicide increases with an elevation in the degree of hopelessness as the link between depression and suicide (Schlebusch 1988).

1.2.9 Family Murder in South Africa

During the 1980's and early 1990's, the phenomenon of family murder in South Africa was perceived as being on the increase. These murders received much attention by the media and a discrete group of social scientists. A few publications were found on this phenomenon of this period, but they were largely in South African Afrikaans journals, university dissertation reports and conference proceedings. Theories that were developed on family murder were largely based on press reports, case studies and case series.

These studies initially postulated that family murder was a phenomenon experienced amongst the Afrikaans speaking "white" segment of the South African population (De Jongh van Arkel 1988; Du Toit 1990; Graser 1992; Pretorius 1987). Du Toit (1990) proposed that family murder was linked to

apartheid, more precisely the notion of Afrikaaner domination, is grounded on their right to determine the lives of others. It is this notion of a misplaced sense of responsibility or guardianship, which was then extended to the family (De Jongh van Arkel 1988; Du Toit 1990). It was reasoned that the head of the household had the power to decide on the fate of the family, culminating in family murder when the external world posed a threat (De Jongh van Arkel 1988; Du Toit 1990; Pretorius 1987). It was proposed that such a family was characterized by isolation, order and control (De Jongh van Arkel 1988; Graser 1992; Pretorius 1987).

Two publications of most worth are by Graser (1992) and the HSRC (1992). Graser (1992) conducted a ten year review of newspaper reports and in depth case studies on a 10% sample (9 cases) of these newspaper reports. He proposed two types of family murders: murder-suicide – where the intent was to murder; and extended suicide – where the primary aim was to commit suicide (Graser 1992). He suggested that the factors leading to such murders are patterns of social isolation and depression of the perpetrator with a trigger event such as a crisis (loss of a job) (Graser 1992).

The Department of Health and Population Development in 1985 commissioned the Human Sciences Research Council (HSRC) to conduct a large scale study on family murder as it was felt that this phenomenon was complex and required an urgent response (Roos & Beyers 1992). The HSRC research combined

quantitative and qualitative methods with 15 000 questionnaires sent to service providers. Only 21 of these questionnaires were returned from service providers with very few having experience of working with such families (Olivier et al. 1991). The second part of the study identified cases via a police register of all family murders. This involved an in-depth study of 11 cases including interviews with police officers, family members, neighbours, friends, employers, religious ministers in each case. The qualitative study found that the majority of perpetrators were male (8 out of 11) between the age of 25 -35 years with at least a high school diploma (Olivier et al. 1991). This study found that family murder was not a white "Afrikaaner" phenomenon, but affected all South African race groups (Olivier et al. 1991). The HSRC study concluded that family murder was as a result of a complex interrelationship of social and psychological factors with the family, in particular the marital relationship being dysfunctional (Olivier et al. 1991). Since this study no other research studies have focused on this phenomenon in South Africa.

Femicide-suicide as a phenomenon is embedded within the concept of family murder. The context of family and relationships has not been considered before. A gendered analysis is required to advance our understanding of this phenomenon. Given the high levels of intimate partner violence in South Africa it is important to establish the incidence of intimate femicide and whether the pattern of intimate femicide differs when the perpetrator commits suicide. We know very little about homicides followed by suicide in South Africa and the

factors leading to these events. The impact of such a "double tragedy" can only have a devastating effect on those left behind. It is therefore important to better understand this phenomenon as it assists in planning prevention. Strategies for prevention should be directed at the point of contact with a service provider or health professional.

Chapter Two

Methodology

2.1 The Setting

In South Africa all deaths have to undergo a certification process whereby a medical practitioner issues a death certificate and the death is registered with the Department of Home Affairs. This is a requirement of the Births and Deaths Registration Act of 1992. Where a death is due to an unnatural cause (i.e. suicide, homicide, poisoning etc.) the procedures as defined by the Inquest Act of 1959 must be followed. Such a death cannot be certified by a medical practitioner, because a post mortem has to be performed to determine the cause of death. In such cases the medical practitioner should inform the police and the body has to be transferred to the nearest medical legal laboratory (mortuary) for a post mortem examination. Where there are no state mortuaries, the state can appoint a private mortuary and designate a police officer to assist the district surgeon to fulfil the medico-legal requirements of a post mortem examination and the documentation process. According to the Inquest Act of 1959 the South African Police Service fulfils this medico-legal function. They have to ensure that a post mortem examination is completed to assist in determining the cause of death, and to investigate an unnatural death to determine who is responsible for the death. The management and function of the medico-legal procedures are in the process of changing. Mortuaries including their management will be transferred to the Department of Health from April 2005.

Once the post mortem has been performed by a pathologist or district surgeon, the police officer has to complete the death register and issue a death certificate outlining the cause of death. The police are obliged to investigate all unnatural deaths as only a judicial officer can decide who can be held responsible for the death of the deceased. Based on the police investigation, a case will either go through a criminal court proceeding or an inquest court inquiry. The later is held when the perpetrator is not known, there is a lack of evidence to prosecute the perpetrator, or no perpetrator is involved (suicide/ some accidents). A criminal court inquiry is held when there is sufficient evidence to lay a charge against the suspected perpetrator and an arrest is made. The majority of unnatural deaths therefore proceed through the medico legal system and medico-legal records are a relatively complete source of data for research on murder.

The recording of such deaths are listed within death registers which are kept and maintained at each mortuary. This register contains details including name, age, sex, date and time of death, etc. A second source of data is the post mortem report, of which copies are meant to be kept at mortuaries in mortuary files, as well as in police case dockets. These dockets are kept and archived at the police station at which the case was investigated and contain details of the criminal investigation and court outcome (criminal and inquest inquiry).

2.2 Study Design

The study was designed as a retrospective national mortuary based study of female homicide, with data collected from a random sample of mortuaries in South Africa for 1999.

The study utilised routine data collected through death registers, to identify all cases of female homicide for 1999 at sampled mortuaries in South Africa. Data was firstly collected through the mortuary records i.e. death registers and mortuary files. All cases identified at mortuary level were then followed up through telephonic interview with the investigating officer, commanding officer or a record review, to determine the victim-perpetrator relationship and the legal outcomes of the cases. This data is not routinely available from death registries or Department of Home Affairs. Lastly post mortem records were reviewed and pathology data was extracted from post mortem reports.

2.3 Population

The study population was all women aged 14 years and older, who had died as a result of a homicide during the year 1999, and had a post mortem performed at a mortuary within South Africa. The age category 14 years and older was used as the study aimed to determine the incidence of intimate partner homicide, as very little dating or few sexually intimate relationships occur before the age of 14.

2.4 Sampling

Sampling was conducted by using stratified cluster sampling techniques. Each mortuary was identified as a cluster and mortuaries were stratified based on the number of post mortems conducted. Mortuaries were randomly selected within a stratum, with the sample size proportional to the number of mortuaries in each stratum.

2.5 Sample

The year 1999 was selected as most cases would have been through the court process and records would be accessible for research. The date and time of death was taken as the period for sampling i.e. deaths that occurred between 00:00 hrs 1st January 1999 and 24:00 hrs on 31st December 1999. The sampling frame was a list of mortuaries prepared for a Department of Health Audit of Medico-legal services in 1999 (Department of Health 2000). This was updated by the researcher, through contact with all the provincial heads of medico-legal services, to ensure that all functioning mortuaries for 2001 were included in the sampling frame. Mortuaries were stratified based on the number of post-mortems performed for 1998. Three strata were developed, namely up to 500 bodies (small mortuary), 501 to 1500 bodies (medium mortuary) and above 1500 bodies (large mortuary). A nationally representative sample of mortuaries was drawn with the assistance of a statistician. The sample size was calculated on the assumption that the standard deviation in the number of femicides between mortuaries was proportional to the standard deviation of the number of bodies

per annum between mortuaries. The approximate ratio of allocation between the three strata was 8:5:12 (8 large mortuaries, 5 medium mortuaries and 12 small mortuaries), which was based on optimal allocation, fitting a sample of 25 mortuaries (Foreman 1991) {see Addendum 1}. Based on the assumption that the number of intimate femicides is approximately 5% of all homicides, this would give a precision (standard error) of approximately 0.15%, thus the confidence interval would have an approximate width of 0.3%. The total of 25 mortuaries was therefore assumed to be sufficient for the required precision for the broader national female homicide study.

The sample of mortuaries was randomly chosen proportional to the number of mortuaries in each stratum. We selected every 2nd mortuary in the Stratum 1 (large), every 7th mortuary for Stratum 2 (medium) and every 14th mortuary starting at the 5th mortuary for Stratum 3 (small).

2.6 Process of Case Identification

This study had a 100% response rate as access to all sampled mortuaries was obtained and all sampled mortuaries were included in the study. There were three stages of case identification as described below:

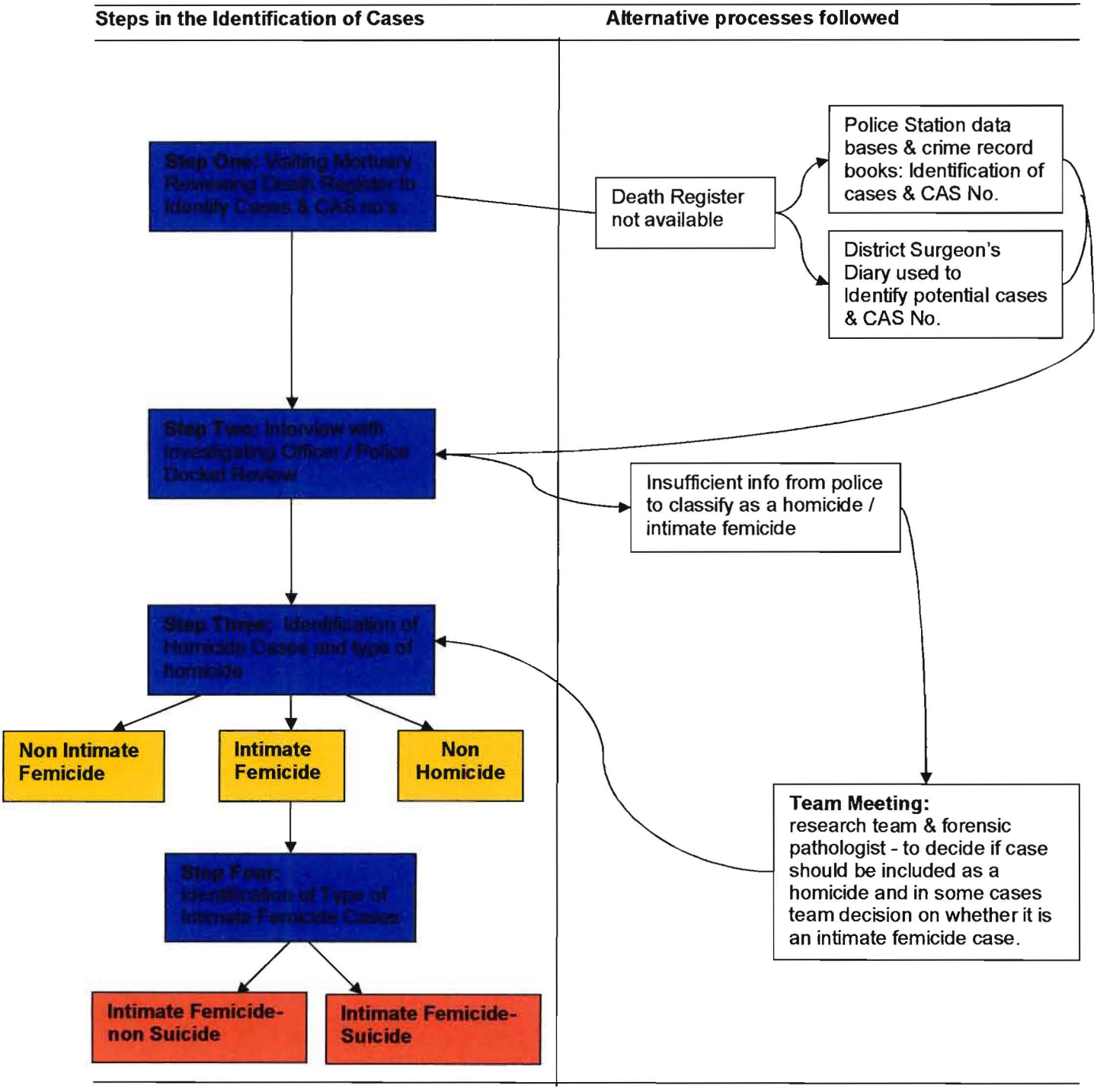
2.6.1 Identification of Female Homicide Cases

All sampled mortuaries were visited by the field workers to identify cases of female homicide via death register/s kept for the year under investigation. At

three small mortuaries, no death registers were kept for the study period, while another mortuary had an incomplete register for this period. At the latter mortuary, the district surgeon made his diary available in order to identify cases of female homicide. For these four mortuaries follow-up visits to the police stations served by the mortuary were undertaken. The crime record books and data bases of the police station were reviewed to identify cases of female homicide, culpable homicide and inquest inquires for the study period.

Where death registers were reviewed the following process was followed. All cases of definite suicide, train accidents, motor vehicle accidents and accidental drowning were excluded at this stage. Unclear cases, such as head injuries, poisoning and fire deaths, were included for further information from police records. All cases with police case numbers (86.9%) were followed-up with the Investigating Officer, and cases were included in the study once it was established with the Investigating Officer that they were homicide cases (see Figure 2 pg. 45). In instances where there was insufficient information from the police to clearly define the case as a homicide, the injury findings from the post-mortem report were used to assist with this classification. Such cases were discussed during research team meetings and a forensic pathologist was part of this team. A decision whether a case was a homicide was based on available information and the forensic pathologist's expert knowledge.

Figure 1: Process of Case Identification



Cases which were definite homicides, but where the perpetrator-victim relationship could not be established (for example when the perpetrator was unknown) were defined as unknown homicide

2.6.2 Identification of Intimate Femicide Case

For the purpose of this study female homicide cases had to be categorised into intimate femicide and non-intimate femicide. Identity of the perpetrator and circumstances around the homicide was critical for this process. The victim perpetrator relationship was obtained through an interview with the police. A small proportion (0.34%) of cases were categorised as suspected intimate femicide. These were cases where the investigating officer strongly suspected the intimate partner, but did not have sufficient evidence to lay a charge. As this was a small percentage of the cases it was merged with the definite cases for this analysis.

2.6.3 Identification of Intimate Femicide Suicide Cases

For this dissertation, a further classification into intimate femicide suicide and intimate femicide non-suicide was necessary. Intimate femicide suicide cases were established based on the police interview or police record review with 19.4% of intimate femicide cases classified as intimate femicide suicides.

2.7 Data Capture Sheet Development

A standardised three-part data capture sheet was designed (Addendum 2). The first part of the data capture sheet was designed to capture mortuary data, the second part to gather police data and the third part to collect pathology data on all cases. The mortuary data was gathered via a record review of the death register and mortuary files. The second data collection process was obtaining data from the police. The preferred method was through telephonic interviews with the investigating officer (53.7%), but when this was impossible an interview with a secondary police source (27.1%) or a record review (19.2%) was conducted. The pathology data was abstracted from a photocopy of the post mortem report that was collected at the time of the mortuary visit. A forensic pathologist extracted the pathology data from these post mortem reports.

The initial data capture sheet was designed through a process of extensive review of literature, assessment of various instruments and consultation with experts in the field. Mortuary variables were based on a modified version of the National Injury Mortality Surveillance System (NIMSS) data capture sheet (Matzopoulos 2002), pathology variables were based on those used in a rape homicide study (Martin 1999), while the pilot study of Vetten (Vetten 1996) was used to inform the variables and items on victim perpetrator relationship and history of intimate partner violence. The fieldwork of Vetten with the criminal justice system assisted in developing questions for the legal outcomes of cases.

The following categories of variables were included in the questionnaire:

2.7.1 Data from Mortuary

- When the homicide occurred; date, day of week and time of homicide.
- Victim demographic information including age and race
- Whether blood for alcohol was taken and alcohol level result (data not used for this dissertation).

2.7.2 Data from Police

- Victim socio-economic status was established by using two measures (employment category and type of housing)
- Perpetrator demographic information: age, race, employment category,
- Circumstances relating to the murder: scene of homicide, legal or illegal gun ownership of perpetrator, alcohol and drug problem use of perpetrator and whether the perpetrator committed suicide after the homicide.
- Establishing victim-perpetrator relationship to categorise the form of homicide. As an outcome measure the homicide was initially categorised either as a definite, suspected female or intimate female homicide and where the homicide could not be typed it was classified as unknown.
- Number of victims involved in the killing, whether the perpetrator committed suicide, whether it was murder was a family murder,
- Previous history of intimate partner violence in the relationship.

- Previous contact with the police regarding intimate partner violence and protection order application, previous use of support systems and medical care. These are vital in identifying risks for women in violent relationships. (Data not used for this dissertation).
- The legal and non-legal outcomes of cases: whether the perpetrator was convicted, type of sentence passed, previous charges of the perpetrator, (data not used for this dissertation).
- Events leading to the victim's death: relationship status at the time of the homicide, if the couple was separated – who initiated the separation and identifying any events associated with the homicide.
- The quality of the police investigation: whether an investigating officer had visited the scene of the crime, whether the pathologist had visited the scene of the crime, whether specimens were taken and what happened to them, and whether photographs were taken as evidence (data not used for this dissertation).

2.7.3 Data from Pathology Report

- Variables included in the pathology data sheet were related to types of injury, location of injury, evidence of sexual abuse, pregnancy and mechanism of death
- Quality of post mortem reports (data not used for this dissertation)
- Type of specimens collected as evidence (data not used for this dissertation)

Although all of the above data was collected for the broader female homicide study this dissertation has only used the variables as indicated above.

2.8 Validity and Reliability

To maximise the reliability of the instrument a standardised data collection sheet was used. The data collection sheet was developed by incorporating previously used instruments i.e. NIMMS data collection form, the rape homicide data collection form combined with expert knowledge on the type of data available from mortuaries and police.

To enhance the reliability of the classification of cases, clear operational definitions of categories were developed at the onset of the research with a clear set of questions to assist in determining the outcome measure of homicide and type of homicide. Team meetings were held to discuss and categorise difficult cases, where police data was insufficient to classify a case. This assisted in reducing misclassification.

To validate police data obtained from the investigating officer on the outcome of cases, a validation study was done in which the court records of 25 random cases from the Salt River mortuary were followed-up. This validation exercise was embarked upon because we relied on the report of the police after the criminal investigation as the outcome of a court case. This could have been erroneously recorded in police records. The validity study found that only 1 out of

the 25 cases yielded a difference in court outcome, indicating a 96% agreement, with a Kappa of 0.94 ($p < 0.000$). This validation study suggested that the data collected from a secondary source, an investigating officer was likely to be both reliable and valid.

Content validity of the questionnaire was ensured through an extensive process of reviewing published literature and a process of consultation with experts in the field. The questionnaire was also circulated to experts in the field for comments to ensure content validity.

The pilot study tested face validity of the questionnaire to determine whether the questions were applicable to the South African setting. The questionnaire was adjusted based on the available data from the mortuaries and investigating officers. This process strengthened both face validity and content validity of the data collection tool.

2.9 Pilot Study

A pilot study was conducted to test the data collection sheet and the logistics relating to the identification of cases via a mortuary and the follow-up interview with the investigating officers. Data were collected at two sites (Salt River and Malmesbury Mortuary) for a three-month period for 1998. During this period, 45 cases were identified. These two sites were selected because of the different systems (private and public) operating at the two mortuaries in question.

Following the pilot study, the data collection sheet was further refined. It was found that police officers collected limited information on previous violence in intimate relationships, and items on stalking were removed from the data collection form. The pilot also made us aware of the difficulties in tracing investigating officers, and the logistics of setting-up of interviews with them. Based on the pilot it became obvious that an alternate data collection process was necessary if investigating officers were no longer available i.e. review of dockets, or the interviewing of commanding officers.

2.10 Data Quality and Management

Data editing was done by the researcher who checked that all questions were answered and the cases were correctly coded. Data quality was ensured by checking each questionnaire after the interview for omissions and errors. Where errors were noted, they were either corrected immediately or the respondent was contacted again to verify information. Data was entered into a Microsoft Access data base. Data management was done by the researcher using Excel and Stata Version 8. Data was cleaned by exploring frequency distributions for incongruent and outlying data e.g. cross tabulating perpetrators who committed suicide with outcomes of cases. Checking often included referring to the actual questionnaire and a cross-check with the entered data.

2.11 Analysis

The study design was taken into account when calculating the relevant national estimates. Three important design factors were considered in the analysis: the stratification of mortuaries, the weighting of each stratum and clustering of cases by mortuary. STATA version 8 was used in the analysis, and the svyset command was used to specify the sampling weights, strata and cluster / primary sampling unit (PSU) identifier variables. Once the weighting, strata and cluster information were specified, the survey commands (svy) were used to factor in the design specifications to the analysis that followed. Mortuaries were weighted based on the number of bodies they processed; small mortuaries had a weighting of 14.6667, medium mortuaries 6.8 and large mortuaries 1.875.

Data were initially examined through computing frequencies, percentages, means and developing graphs to visually determine the distribution of data. The following stata commands were used: svyprop, svymean, svytab and sum (var) (weight), the latter to derive median estimates. This generated a descriptive analysis of the demographic characteristics of both victims and perpetrators, the factors associated with the homicides and the injuries of the victims. It also provided a comparison of the two groups (IFS and IF-nonS). The Shapiro-Wilk test was performed on continuous data, i.e. ages of victim and perpetrator, to determine whether they were normally distributed or not.

The incidence rates for intimate femicide-suicide victims and perpetrators were calculated. The population data that were used as the denominator for the calculations of rates was obtained from the 1996 Census data (Statistics South Africa 1998). These population figures required adjustment to reflect the year under investigation. In consultation with a demographer, the population estimates were adjusted for a yearly increase of 2.5% and estimates were obtained for the year 1999.

Further analysis of the two categories of intimate femicide cases was conducted. Frequencies of intimate femicide-suicide cases (IF-S) and intimate femicide- non suicide cases (IF-nonS) were calculated for each independent variable using the svytab stata command. The significant differences in proportions between the two groups were tested using the Chi Square test for homogeneity. This was not used if cells had a frequency of <5 observations. Unadjusted odds ratios and 95% confidence intervals were calculated to describe the association between intimate femicide-suicide (IF-S) and each independent variable using the xi: logit stata command. The independent variables included were: age, race, employment status & category for both victim and perpetrator, living arrangements, scene of homicide, other victims, relationship status, problem substance use, gun ownership, preceding events, primary cause of death, type of injury, other evidence and mechanism of death.

Finally, a logistic regression analysis was performed to describe the risk factors associated with IF-S among intimate femicide cases. The model building process started with identifying possible confounders and independent variables that were significant in at the crude level. The three variables victim age, perpetrator age and perpetrator race were considered potential confounders while victim race and perpetrator race were shown to be collinear. Model building commenced with a base model including the potential confounders. A forward model building process was followed with the addition of variables to the model. Variables were removed when they had no significant effect on the outcome. The final model contained the independent variables that remained significant at the 0.05 level or less. Two measures were used to assess the fit of the model. The log likelihood ratio compared to previous models and the chi square statistic.

2.12 Ethics

Ethical approval for the study was obtained from the ethics committee at the Medical Research Council and from the University of Cape Town's Research Ethics Committee. Access to mortuaries was gained through the National Department of Health and from each provincial head responsible for mortuaries. The Commanding Officer for each mortuary was also approached to give permission to access the death registers and post mortem reports at each sampled mortuary.

The study was conducted anonymously as data capture sheets did not collect the name of the victim or perpetrator. Cases were only identified by a research number assigned to them. It was not possible to obtain Informed consent from the study subjects because they were deceased. The confidentiality of the victims and perpetrators was ensured at all times.

Permission to access information from the investigating officers was obtained from the National Commissioner of Police. Prior to the telephonic interview written informed consent was obtained from each investigating officer. Data gathered from investigating officers were also collected anonymously as the study did not want to influence the possible outcome of a case.

The researcher was also of the opinion that she had an ethical obligation towards the study subjects, murdered women. Where it was found that a homicide had not been investigated, the researcher liaised with the National Department of Police Services to attempt to trace such cases or open dockets where none existed. The researcher also had an ethical responsibility to provide feedback to the stakeholders (South African Police Services & Department of Health) as well as to disseminate the research findings to enhance safety of women. The researcher will engage in a process of disseminating the research findings to different groups of stakeholders in order for the findings to have maximum impact and to benefit South African women and families.

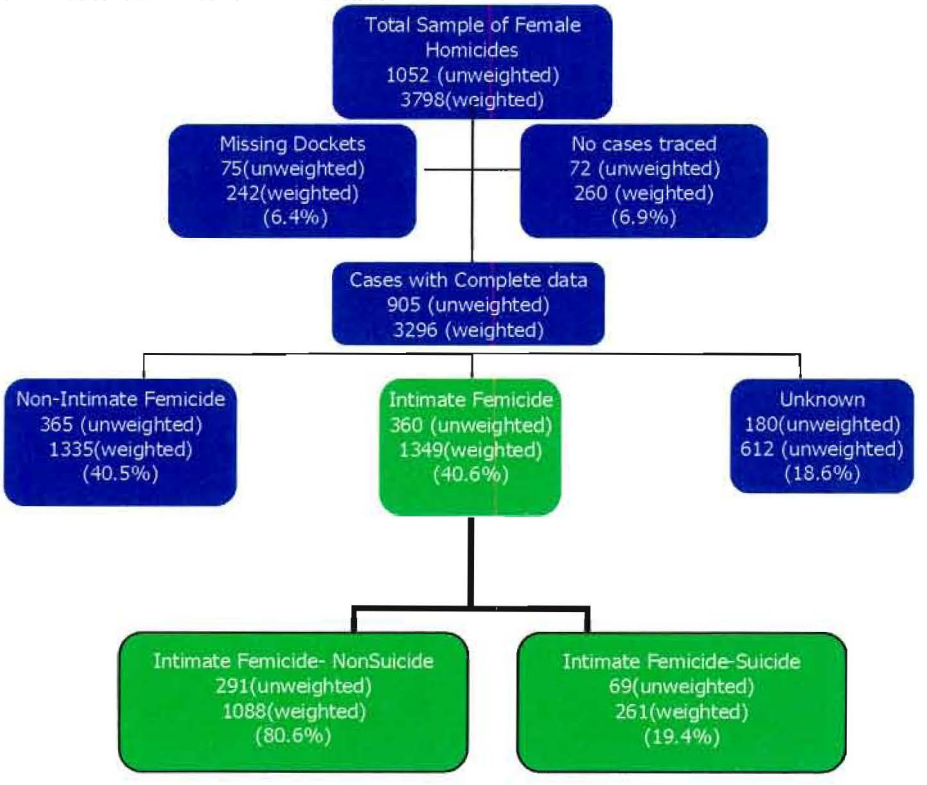
Chapter Three

Results

3.1 Introduction

The study had a 100% response rate as access was obtained and data was collected at all sampled mortuaries. The sample yielded one thousand and fifty two cases of female homicide. This translated to a national estimate of 3798 cases of female homicide for the year 1999. No police cases could be traced in 6.9% of cases, and in 6.4% a police investigation was opened but no case dockets could be traced (see Figure 2). Complete police data was obtained in 86.7% of the identified cases. In 18.6% of the identified cases with complete police data, the victim-perpetrator relationship could not be established because police investigation did not yield a suspect. Although these cases were definite homicides.

Figure 2: Flow Chart of all cases identified



3.2 Rates of Intimate Femicide and Intimate Femicide-Suicide

The broader female homicide study found that 50.3% of all female homicides in South Africa for the year 1999 were perpetrated by an intimate partner. There were an estimated 1349 women killed by an intimate partner for the study period. Of these cases 19.4% were classified as intimate femicide-suicide (IF-S) cases i.e. the perpetrators of the intimate femicide had committed suicide within a week following the killing of their intimate partner. There were an estimated 261 IFS cases for 1999 in South Africa. The analysis for this dissertation focuses on the comparison between intimate femicide-suicide (IF-S) cases and intimate femicide- non suicide (IF-nonS) cases in order to describe the factors that distinguish IF-S and IF in which the is no suicide.

An IF-S rate of 1.7 per 100 000 women aged 14 years and older was found for the year 1999 (Table 2). Intimate femicide suicide rates stratified by age and race are presented in Table 2. These show that the highest IF-S rate was found among Indian women (4.6/ 100 000) while the lowest rate was reported for coloured women (0.9/100 000). The highest IF-S rate by age was reported for women aged 20 – 29 (3.8/ 100 0000) with the lowest rate being reported for women aged 50 - 59 years (0.3/100 000).

Table 2: Intimate Femicide-Suicide Rates per 100 000 for Victims and Perpetrators 14 years and older by race and age group

	Rate/100 000 women 14 years and older	Rate / 100 000 males 14 years and older
	IF-Suicide	*IF- Suicide
Race		
African	1.8	2.1
Coloured	0.9	1.1
White	1.4	1.5
Indian	4.6	3.4
Age (years)		
14-19	1.2	-
20-29	3.8	3.1
30-39	1.6	3.7
40-49	0.4	0.8
50-59	0.3	0.7
60+	0.5	0.6
Overall	1.7	2.1

* Missing data for male age in 1.4% of perpetrators
14 year age cut off also used for perpetrators due the criterion of "intimate relationships"

The perpetrator rate for IF-S during the year 1999 was 2.1 per 100 000 men aged 14 years and older (Table 2). Perpetrator IF-S rates stratified by race and age are presented in Table 2. The highest rate of IF-S was reported for Indian men (3.4/100 000) with the lowest rate reported for coloured men (1.1/100 000). Age stratification rates shows that the highest rate was found for men in the age group 30-39 (3.7/100 000) while the lowest rate was for men in the age range 60+ (0.6/100 000).

3.3 Comparing Patterns of Intimate Femicide-Suicide and Intimate Femicide- nonSuicide

Figure 3 shows patterns of IF-S and IF-nonS by month of femicide. Although no significant difference was found, there appear to be months in which higher proportion of IF-S occurs compared to IF-nonS. These are January (14.8% vs 7.8%), February (15.5% vs 5.6%), June (10.4% vs 5.2%) and July (14.8% vs 11.5%).

Figure 3: Comparing Patterns of IFS & IF-nonS by month of killing

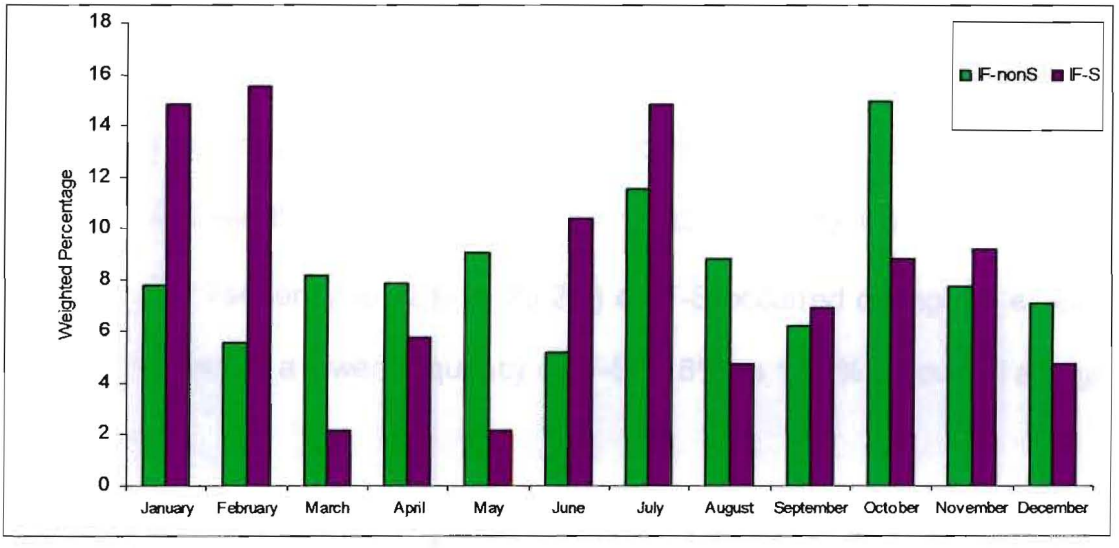
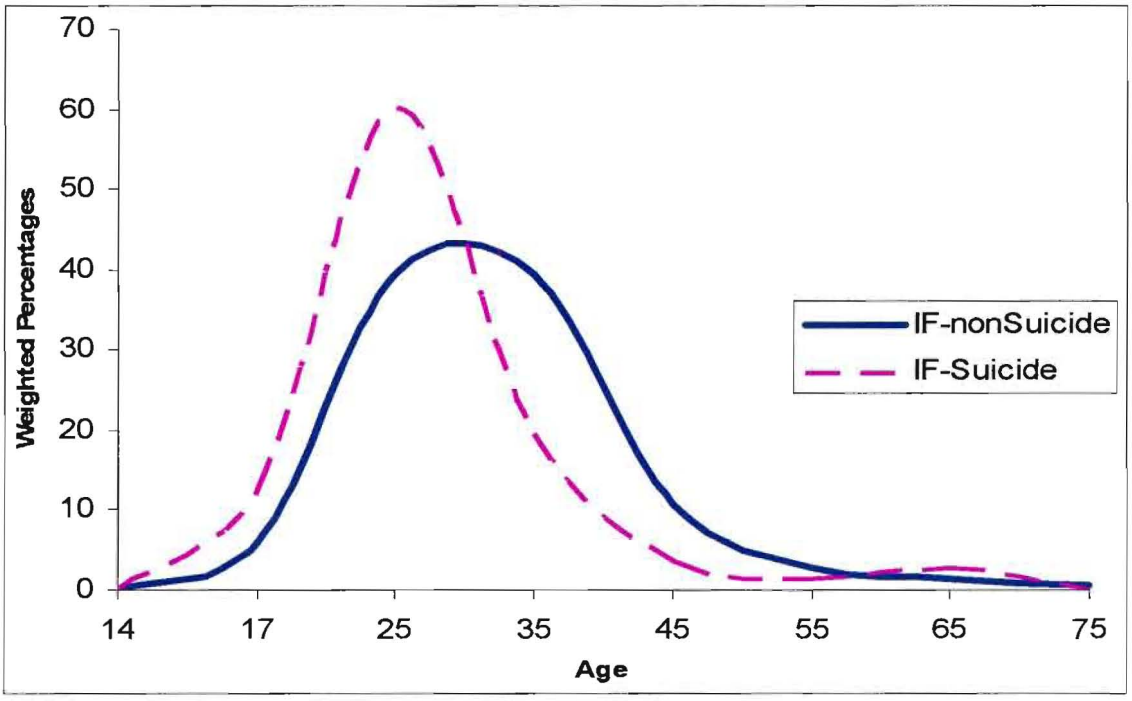


Figure 4 shows the frequency of IF-S and IF-nonS by day of week. A chi square test of association found that there was a significant difference between the two IF groups ($\chi^2 = 33.12, p=0.01$). There was a higher frequency of IF-S on a Sunday (19.8% vs 14.4%) and Monday (25.5% vs 5.7%).The frequency of IF-S remained relatively consistent for the rest of the week ranging from 12.1% to 14.1%.

3.4 Characteristics of Victims

The age distribution of the victims of IF-S and IF-nonS are shown in Figure 6. The median age of victims of IF-S was younger, 26 years with a range of 17 years to 65 years, while the median age of the IF-nonS cases was 30 years with a range of 14 years to 80 years. A significant mean age difference of 3.6 years (95% CI 0.16 – 7.01) was found between the two groups (p= 0.041).

Figure 6: Victim Age - Comparison of IF-Suicide and IF-nonSuicide victims



A comparison of the characteristics of victims is reported in Table 3. A stratified analysis of age showed no significant difference in victim age between the two groups. However, a larger proportion of IF-S compared to IF-nonS victims (73% vs. 45.5%) was younger than 30 years.

A significant difference ($p < 0.001$) was found between the two groups for race. Victims of IF-S victims were less likely to be Coloured (OR 0.2 95%CI 0.07 – 0.65) than African victims. No other significant associations were found for victim race.

There was a significant difference in employment status between the groups ($p = 0.05$). Victims of IF-S were more likely to be employed than IF-nonS victims (44.1% vs 20.5%). A negative association was found between unemployment and IF-S (OR 0.31 95%CI 0.1-0.96) compared to being employed, but there is a wide confidence interval. Victims of IF-S were more likely to be employed in the security industry (OR 11.97 95%CI 1.2-118.84) compared to being employed as a blue collared worker. The data also showed no significant difference for living arrangements between the two IF groups.

When comparing the number of victims killed in the event, a significant difference was found between the IF groups ($p=0.01$). IF-S cases were more likely to have more than one victim killed by the perpetrator (17.42% vs 2.4%) compared to IF-nonS cases, with an 8.6, (95% CI1.18 - 63.27) fold increase in odds among the IF-S group. These other victims included their children, relatives and close friends. In 12.7% of IF-S cases the homicide was classified as a family murder which translates to 33 cases of family murder for the year 1999.

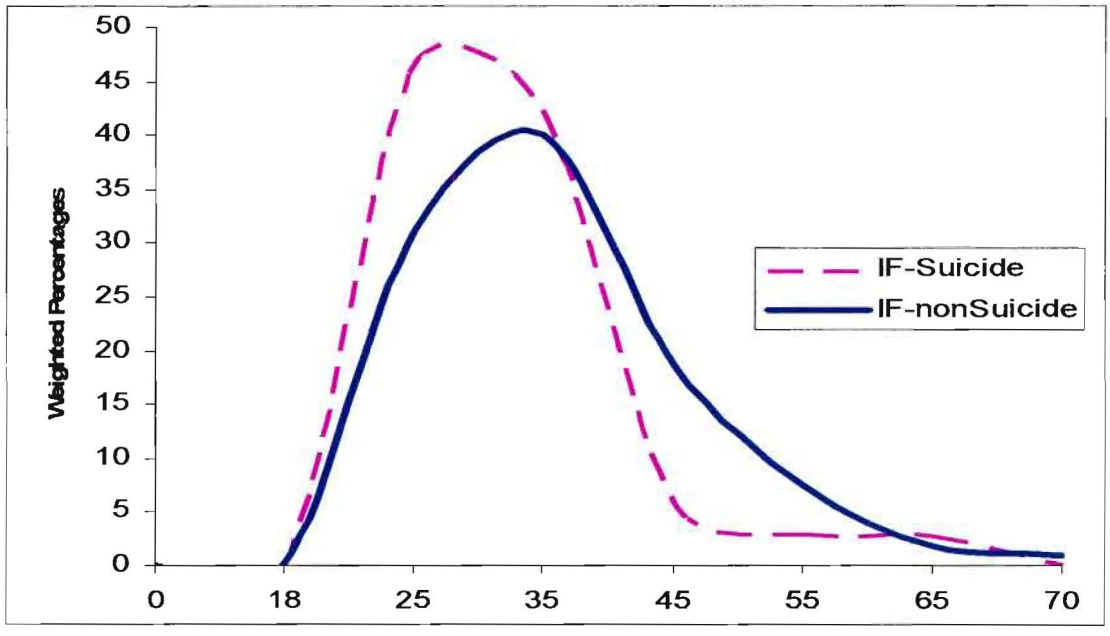
Table Three: Characteristics of Victims: Comparing Intimate Femicide-suicide (IFS) and Intimate Femicide- nonSuicide (IF-nonS)

	Total IF % N = 1349	IFS % n=261	IF NonS % n=1088	OR (CI)
Age				
14-19	7.3	12.7	5.9	Ref
20-29	43.8	60.3	39.5	0.71 (0.14- 3.53)
30-39	35.2	19.4	39.3	0.23 (0.03- 1.64)
40-49	9.3	3.6	10.8	0.16 (0.02-1.00)
50-59	2.4	1.4	2.7	0.25 (0.02-3.14)
60+	1.5	2.6	1.9	0.64 (0.04- 11.16)
		(χ^2 = 19.1 , p= <0.12)		
Race				
African	75.8	79.7	74.9	Ref
Coloured	18.7	5.0	22.0	0.21 (0.07-0.65)
White	3.9	10.2	2.5	3.9 (0.93- 16.44)
Indian	1.5	5.0	0.7	6.85 (1.0-48.24)
		(χ^2 = 24.3 , p= <0.001)		
Employment				
Employed	25.1	44.1	20.5	Ref
Unemployed	56.6	40.3	60.6	0.31(0.1- 0.96)
Unknown	18.4	15.5	19.0	0.38(0.14-1.03)
		(χ^2 = 17.03 , p= <0.05)		
Employment Category				
Blue-collar	48.3	28.4	58.6	Ref
Pensioner	2.6	5.9	0.8	14.47 (0.37- 586.67)
Professional	24.9	30.6	22.0	2.88 (0.47-17.69)
Security Industry	2.2	4.9	0.8	11.97 (1.2- 118.84)
Student	22.0	30.3	17.8	3.53 (0.72- 17.21)
		(χ^2 = 9.38 , p= 0.17)		
Living Arrangement				
House	27.1	41.0	23.7	Ref
Hostel	0.4	0.0	0.5	-
One roomed dwelling/ shack	68.9	56.4	71.9	0.45 (0.18-1.14)
Homeless	2.8	2.6	2.9	0.53 (0.07- 4.12)
Unknown	0.8	0.0	1.0	-
Scene of Homicide				
Victim's Home	68.0	72.7	66.8	Ref
Other Home	7.2	5.5	7.6	0.66 (0.16-2,76)
Victim's Work	2.1	0.7	2.4	0.28 (0.02-3.26)
Urban Public Space	13.0	9.2	13.9	0.61 (0.16- 2.31)
Rural Public Space	8.2	11.2	7.5	1.38 (0.27-7.18)
Other	1.6	8.6	1.8	0.36 (0.04- 3.48
		(χ^2 = 3.75 , p= 0.715)		
Other Victims				
One Victim	94.7	82.6	97.6	Ref
More than 1 victim	5.3	17.4	2.4	8.6 (1.18-63.27)
		(χ^2 = 25.35 , p= 0.015)		

3.5 Characteristics of Perpetrators

A comparison of the perpetrators' age distributions is presented in Figure 7. The median age of IF-S perpetrators was younger (30 years) than IF-nonS perpetrators (34 years), with a range of 18 – 72 years for IF-nonS perpetrators and 20-65 years for IF-S perpetrators. A mean difference of 3.5 years was found between the two groups, with no significant difference between the two groups for age.

Figure 7: Perpetrator Age - Comparison of IF-Suicide and IF- nonSuicide perpetrators



The characteristics of perpetrators are presented in Table 4. A stratified analysis of perpetrator age shows a significant difference between the two IF groups for the age group 40-49 years, with perpetrators of IF-S less likely to be in this age group (OR 0.21 95%CI 0.07-0.65) compared to perpetrators in the age group 14 -29 years. The proportion of IF-S perpetrators declined from 40 years with only 5.5% of these perpetrators older than 50 years, in comparison to 10.1% of IF-nonS perpetrators.

A significant difference was found between the two groups for perpetrator race categories (p = 0.003). IF-S perpetrators were more likely to be Indian with an increased odds of 5.2 (95% CI 1.3-20.3) compared to African perpetrators, the confidence interval is, however, wide. In contrast, Coloured perpetrators were less likely to commit suicide after killing their partner (4.3% vs 20.9%) with a decreased odds of 0.18, (95% CI 0.1; 0.5) compared to African perpetrators.

A significant difference was found in employment status of perpetrators (p=0.04) as well as for perpetrator employment category (p< 0.0001) between the two IF groups. IF-S perpetrators were more likely to be employed in the security industry (58% vs 8%), professional/white collar workers (14.1% vs 3.6%) and self employed (9.9% vs 5.6%) compared to IF-nonS perpetrators. A positive association was found between IF-S and being a security worker, (OR 24.1 95%CI 4.55-127.44), professional/ white collar worker (OR 12.9 95%CI 4.84-34.51) and self employment (OR 5.9 95%CI 1.25- 28.06) compared to being a blue collared worker, but the CI for security workers is particularly wide.

Table Four: Characteristics of Perpetrators: Comparing Intimate Femicide-suicide (IFS) and Intimate Femicide-nonSuicide (IF-nonS)

	Total IF % N = 1349	IFS % n=261	IF- NonS % n=1088	OR (CI)
Age				
14-29	34.2	46.4	31.1	Ref
30-39	40.5	42.2	40.1	0.71 (0.24; 2.09)
40-49	16.1	5.8	18.7	0.21 (0.07; 0.65)
50-59	6.5	2.9	7.4	0.26 (0.07; 1.0)
60+	2.7	2.6	2.7	0.65 (0.03; 11.66)
		(χ^2 = 10.88 , p= 0.196)		
Race				
African	76.4	80.4	75.4	Ref
Coloured	17.7	4.3	20.9	0.19 (0.07- 0.54)
White	3.9	9.5	2.6	3.39 (0.76-15.1)
Indian	2.0	5.7	1.0	5.21 (1.33-20.31)
		(χ^2 = 17.85 , p= 0.003)		
Employment				
Employed	53.4	65.3	50.5	Ref
Unemployed	37.9	20.6	42.0	0.38 (0.14- 1.0)
Unknown	8.8	14.1	7.5	1.45 (0.52-4.04)
		(χ^2 = 11.92 , p= 0.04)		
Employment Category				
Blue-collar	50.2	18.1	60.1	Ref
Gardener/ Farm worker	16.1	0.0	21.1	-
Professional/White collar	6.1	14.1	3.6	12.9 (4.84-34.51)
Security Industry	19.8	58.0	8.0	24.1 (4.55- 127.44)
Self employed	6.6	9.9	5.6	5.9 (1.25-28.06)
Student	1.2	0.0	1.6	-
Relationship Status				
Boyfriend	29.9	31.7	29.5	Ref
Husband	18.4	27.8	16.5	1.74 (0.66- 4.61)
Cohabiting Partner	50.1	40.5	52.1	0.59 (0.25-1.40)
Other	1.6	0.0	1.9	-
Problem Substance Use				
No problem alcohol use	65.8	87.9	60.5	Ref
Alcohol	34.2	12.1	39.5	0.09 (0.03-0.24)
		(χ^2 = 42.05 , p= 0.0007)		
No problem drug use	95.0	98.6	94.2	Ref
Drugs	5.0	1.4	5.8	0.27 (0.04- 1.66)
		(χ^2 = 3.59, p= 0.37)		
Gun ownership				
Do not own a legal gun	79.4	33.7	90.4	Ref
Legal	20.6	66.3	9.6	10.46 (3.81- 28.7)
		(χ^2 = 111.02 , p< 0.0000)		
Do not own an illegal gun	92.9	89.5	93.7	Ref
Illegal	7.1	10.5	6.3	1.37 (0.1-18.27)
		(χ^2 = 7.67, p= 0.12)		
Preceding events				
Alleged infidelity of victim	19.7	16.3	19.1	1.0
Argument	45.9	32.4	43.4	1.18 (0.21-6.66)
Female partner ending relationship	8.4	29.0	12.2	4.16 (1.12-15.49)
Other	17.3	1.3	14.4	0.09 (0.01-0.99)
		(χ^2 = 16.16 , p= 0.03)		

The results revealed that overall 4.2% of all IF perpetrators were ex-partners with no difference between the groups (data not presented). Ex-partners were therefore not analysed as a separate category. No significant difference in terms of relationship status was found between the two IF groups (p=0.3). A larger proportion of IF-S perpetrators were husbands (27.8% vs 16.5%) and boyfriends (31.7% vs 29.5%) compared to IF-nonS perpetrators. Overall, in the broader study, a small proportion (1.6%) of women were killed by perpetrators in other relationships i.e. same sex relationships and incestuous relationships, with no IF-S's occurring among this category of perpetrators.

Fewer perpetrators with a problem alcohol use committed IF-S (12.1% vs 39.5%). Similarly problem drug abuse was also less frequent among IF-S perpetrators (1.4% vs 5.8%) compared to IF-nonS perpetrators.

A strong positive association was found between legal gun ownership and IF-S with an odds ratio of 10.5 (95%CI 3.81-28.7). A larger proportion of IF-S perpetrators owned a legal gun (66.3% vs 9.6%) in comparison to IF-nonS perpetrators. Similarly, illegal gun ownership was also more common among perpetrators of IF-S (10.5% vs 6.3%), but no significant difference was found.

A significant difference between the two IF groups was found in relation to the events preceding the intimate femicide (p= 0.03). In IF-S cases the preceding event was most likely to be a female partner ending the relationship (29% vs

12.2%). A positive relationship was found between IF-S and a female partner ending the relationship with a 4.2 fold increase in odds (95%CI 1.1-15. 5) compared to alleged infidelity of the victim.

3.6 Pathology Findings

Table Five describes pathology findings. In 4.5% of cases the primary cause of death remained undetermined. In comparing the two IF groups, a larger proportion of IF-S victims had a single injury as their cause of death (58.9% vs 46.7%) and a decreased proportion of IF-S victims had multiple injuries (41.1% vs 47.7%) compared to IF- nonS victims. This difference was however not statistically significant.

The findings on the type of injury show that IF-S victims were significantly less likely to have pelvis/buttocks injuries (2.9% vs 16.1%) (OR 0.15 95%CI 0.05-0.52) and lower limb injuries (4.8% vs 27.7%) (OR 0.13 95% CI 0.3-0.56). Genital or anal injuries were not found among victims of IF-S.

The mechanism of death is also described in Table 5. Significant differences were found for being killed by a gun and by blunt force. The biggest difference was that IF-S victims were more likely to be killed by a gun (82.7% vs 17.9%) (OR 21.7 95%CI 5.9-79.7) compared to IF-nonS victims but there is a wide confidence interval. In contrast a negative association was found with the use of blunt force; IF-S victims were less likely (12% vs 39.3%) to be killed in this manner (OR 0.19 95%CI 0.04-0.74). Similarly a smaller proportion of IF-S victims

were killed by a sharp object (14.7% vs 37.2%) but this difference was not significant.

Table Five: Pathology findings: Comparing Intimate Femicide-suicide (IFS) and Intimate Femicide-nonSuicide (IF-nonS)

	IF % N = 1349	IFS % n=261	IF- NonS % n=1088	OR (CI)
Primary Cause of Death				
Multiple Injury	46.4	41.1	47.7	Ref
Single Injury	49.2	58.9	46.7	1.45 (0.59-3.58)
Undetermined	4.5	0.0	5.6	-
***Type of Injury**				
Head& Face	67.4	81.2	64.0	2.4 (0.86-6.79)
Neck	29.9	35.7	28.4	1.39 (0.46-4.25)
Thorax	63.2	50.7	66.2	0.53 (0.2- 1.36)
Abdomen/back	24.9	19.1	26.3	0.66 (0.25-1.75)
Pelvis/buttocks	13.5	2.9	16.1	0.15 (0.05-0.52)
Upper limbs	39.4	28.8	41.9	0.56 (0.24- 1.31)
Lower limbs	23.2	4.8	27.7	0.13 (0.3- 0.56)
Genital Injury	2.8	0.0	3.5	-
Anal Injury	0.4	0.0	5.6	-
***Other Evidence**				
Evidence of Pregnancy	2.5	7.8	1.2	6.79 (0.79- 58.06)
Evidence of Sexual Assault	11.4	8.3	12.2	0.65 (0.11-3.76)
***Mechanism of Death**				
Gun	30.6	82.7	17.9	21.7 (5.9-79.7)
Sharp Object	32.7	14.7	37.2	0.28 (0.08-1.04)
Blunt Force	34.0	12.0	39.3	0.19 (0.04-0.74)
Strangled/Asphyxiated	3.7	2.6	3.9	0.66 (0.08- 5.67)
Fire	1.1	0.0	1.4	-
Drowned	0.4	0.0	0.5	-
Other	0.7	0.0	0.7	-

*** The reference category:**
a. Type of Injury- is not having that injury
b. Other Evidence – no evidence of pregnancy / sexual assault
c. Mechanism of Death – no mechanism of death

3.7 Findings from a Logistic Regression Analysis on factors associated with perpetrator suicide

Table 6 shows the results of a logistic regression model for factors associated with perpetrators of IF committing suicide. The model was adjusted for victim and perpetrator age which were considered to be potential confounders. Significant

positive associations were found for the perpetrator being employed as a professional (OR 44.9 95%CI 5.61-359.23), perpetrator owning a legal gun (OR 7.1 95%CI 2.81-17.83) and the perpetrator being classified as white (OR 8.3 95% 1.91-36.39). This model explains that 53% of the variance for the perpetrator committing suicide after killing his intimate partner.

Table Six: Logistic Regression Analysis Model - Factors associated with Intimate Femicide Perpetrator committing suicide *(Weighted Estimates)*

Variable	Odds Ratio	95% CI	*p*-value
Perpetrator Occupation			
Blue Collar	ref	-	
Other	1.9	(0.56-6.49)	0.29
Professional/ White collar	44.9	(5.61- 359.23)	0.001
Security	4.2	(0.51- 34.05)	0.17
Gun Ownership			
No legal Gun	ref		
Legal Gun Ownership	7.1	(2.81- 17.83)	<0.0000
Perpetrator Race			
African	ref	-	
Coloured	1.0	(0.21- 5.02)	0.966
White	8.3	(1.91- 36.39)	0.007
Indian	0.7	(0.2- 2.49)	0.57
Log pseudo likelihood	-41.01		
Wald Chi2	45.8		
P value	< 0.0001		
Pseudo R^2	0.53		

Chapter Four

Discussion

4.1 Prevalence of Intimate Femicide-Suicide

This study found that 19.4 % of all intimate femicide perpetrators also committed suicide. This proportion appears to be at the lower end of reported male intimate femicide-suicide incidence with it reported to range from 18% - 40% (Cooper & Eaves 1996; Dawson & Gartner 1998; Koziol-McLain et al in press; Lund & Smorodinsky 2001; Morton et al. 1998) . However, the study found that IF-S rates for victims of 1.7/100 000 women 14 years and older were higher than comparable reported rates for intimate femicide-suicide, 0.67 – 1.06 (Morton et al. 1998). A review by Marzuk et al (1992) found that rates of homicide-suicide (both male and female homicides followed by suicide) were constant across countries averaging 0.20 – 0.30 per 100 000. The higher IF-S rate found in this study suggests that a different pattern exists within South Africa.

4.2 Predictors of perpetrator suicide after the killing of a female intimate partner

The logistic regression analysis of the factors associated with perpetrator suicide found the following to be significant: the perpetrator being of White race; employed as a professional or white collar worker; and owning a legal gun. Unraveling these associations is complex.

Understanding the association between the perpetrator being White and IF-S is compounded by the institutionalization of race through apartheid policies in South Africa (West & Boonzaaier 1989). Based on these experiences race in South Africa is a social construct that may be defined by culture (West 1998). Culture allows one to construct what is socially acceptable practice i.e. violence against women, suicide, gender roles etc. Intimate femicide rates reveal that it is lowest among Whites (Mathews et al. 2004), while this study showed that the perpetrator being white is significantly associated with IF-S. This pattern may be linked to a combination of factors and exploring the pattern of suicide in South Africa may start to explain some of these differences. Suicide trends in South Africa also show that the rate of suicide is highest among White males (Flisher et al. 2004). These studies on suicide suggests that racial differences in suicide mortality may be explained by; pressures of succeeding, how families are structured (nuclear vs extended families) and support provided by extended families during crisis (Burrows et al. 2003; Flisher et al. 2004). Some cultures also view suicide as a taboo, based on religious convictions and cultural norms (Flisher et al. 2004). Therefore in times of crisis (killing of an intimate partner) blame may be internalised (Burrows et al. 2003). The shame of facing negative sanctions may result in an increase sense of remorse with suicide viewed as the only way out.

The pattern of IF and IF-S is reverse for Coloured males i.e. the highest IF and lowest IF-S rates. This difference in pattern for Coloured men may be linked to

the greater acceptability of using violence in general (Legget 2004). This increase tolerance of more severe forms of violence might suggest that it is more acceptable for Coloured men to kill an intimate partner, as levels of violence against women have also been found to be highest among Coloureds (Abrahams et al. 2004; Jewkes et al. 2002).

This link between social experiences and IF-S are also supported by the association with the perpetrator's employment category i.e.; employed as a white collar worker or professional. This association may be through the individual's socio-economic position, that may impact on the individual's values and behaviour related to murder of an intimate partner. Studies that have explored the factors associated with IF-S suggest that it is a middle class phenomenon as it is more common among married men who are employed (Lund & Smorodinsky 2001; Rosebaum 1990). Kozoil-McLain et al (in press) in their study comparing IF-S to abused controls found similar associations. They report that perpetrators of IF-S were more "conventional"; employed, married, did not abuse drugs or abuse during pregnancy. This study has also found that perpetrators of IF-S were of a higher socio-economic status and would perhaps have more to lose after killing an intimate partner. This suggests that the possibility of negative consequences such as the shame attached to incarceration and imprisonment might result in the perpetrator choosing suicide. It is not easy to fully understand this phenomenon because both the victims and perpetrator have died and there are usually no suicide notes.

Legal gun ownership has also been shown to increase the risk of IF-S. Many studies have also found an association between guns and an increased risk of IF-S (Bourget et al. 2000; Dawson & Gartner 1998; Easteal 1994; Koziol-McLain et al. in press; Lund & Smorodinsky 2001; Milroy et al. 1997). Gun ownership and access to guns are important factors to consider in violent relationships. The greater proportion of perpetrators employed in the security industry who perpetrated IF-S also reflects the increased vulnerability to murder for those who have easy access to guns. Using a firearm would suggest that it makes the act of killing (both of another and oneself) easy due to its lethality compared to other weapons. Legal gun ownership therefore poses an important public health problem and highlights the need to vigorously implement the new gun control legislation in South Africa.

4.3 Age and Intimate Femicide-Suicide

After adjusting for other factors, the age of both the victim and perpetrator were not found to be associated with IF-S. However, contrary to other research, this study found that both the perpetrator and victim were relatively younger (median age: perpetrators 30 years and victims 26 years). Other studies have reported perpetrators to be older, approximately 40 years (Dawson & Gartner 1998; Easteal 1994; Marzuk et al. 1992; Morton et al. 1998). We found that the rate of IF-S decreased as age increased, with a very small peak among the elderly. Other studies have found a much more marked second peak among the elderly (Lund & Smorodinsky 2001; Marzuk et al. 1992; Morton et al. 1998). These

authors suggests that IF-S among the elderly may be linked to declining health and financial stresses resulting in mercy killings and suicide pacts (Lund & Smorodinsky 2001; Marzuk et al. 1992; Milroy et al. 1997). The findings from this study would suggest that this is not very common among IF-S in South Africa.

4.4 Injury Patterns & Mechanism of Death

Victims of IF-S were more likely to have died from a single injury to the head, or neck, than victims of IF-nonS. This could be linked to the mechanism of death with the overwhelming majority (83%) of IF-S having died of a gunshot wound. Victims of IF-nonS were more likely to have died from multiple injuries and blunt injuries. Injuries of the thorax, pelvis/buttocks, upper limbs, lower limbs and genital injuries were more likely in victims of IF-nonS. These patterns would suggest that these victims sustained injuries which were inflicted with substantial force, with possible evidence of defense wound in cases of upper limb injuries. This pattern of multiple injuries may suggest that in cases of IF-nonS, there was more often a struggle, with victims trying to protect themselves. Victims of IF-S, however, had mostly no chance of protecting themselves due to the immediate lethality of the mechanism of death i.e. a single gunshot.

4.5 Explaining Intimate Femicide-Suicide

The phenomenon of IF-S has been explored theoretically on the premise that it is a distinct act that differs from both female homicide and intimate femicide. Theories of IF-S have been developed around three groups of ideas. One of the

earliest ideas is linked to the psychological state of the perpetrator. It has been proposed that the depressive state of the perpetrator leads to morbid jealousy and delusions resulting in the killing of an intimate partner (Rosebaum 1990). The act of killing his intimate partner results in immense guilt and remorse with suicide viewed as the only way out.

Secondly, it has been proposed that IF-S is premeditated and carefully planned (Dawson & Gartner 1998; Graser 1992; Marzuk et al. 1992). The evidence for this being a planned act is based on the pattern of having a short period between the two acts, with leaving of notes and a history if stalking (Marzuk et al. 1992). According to this theory, this premeditation of IF-S is linked to pathological possessiveness and jealousy of the male perpetrator and is called a "spiteful" act by the authors (Dawson & Gartner 1998). Graser (1992) suggests that this group of IF-S should be considered to be primarily extended suicides, i.e. the primary aim is suicide, which is rational and carefully planned, with the homicide being act of taking the family with him.

The third theory that is also put forward by Graser (1992) is that IF-S is an explosive, spontaneous act linked to jealousy and possessiveness. A common theme expressed by all these ideas is the notion of jealousy and possessiveness of the male perpetrator. The premeditated nature of the act cannot be determined by our study as no data on stalking or the presence of suicide notes were available from the investigating officers. The ideas proposed by these authors all

appear to have some merits, but it does not adequately explain this phenomenon in South African. The missing link appears to be an adequate gender analysis of this phenomenon. Although the theories discuss "possessiveness and jealousy" it is not conceptualized into a gendered framework. These theories fundamentally fail to take into account the patriarchal nature of South African society. Culture and tradition is still an important facet of intimate relationships, as many relationships are still based on the notion that the male is the "head of the household" and thus in control. In addition we have to consider the notion of ownership and control of the male over their female intimate partner which cannot be construed as pathological, but normative behaviour. However, this phenomenon requires further qualitative exploration. Interviewing perpetrators who attempted suicide after killing an intimate partner may help us gain better insight into this phenomenon, but such a study will not be easy.

4.6 Study Limitations

Although the study had a 100% response rate, complete data on cases was obtained in only 86.7% of cases identified at mortuary level. In 6.9% of cases no police case number could be traced, while 6.4% of cases dockets were classified as missing and could not be traced. This raises human rights concerns, as this indicates that in 1999 nearly 7% of women who died unnaturally had no police investigation or a criminal justice inquiry. In these cases, relationship with perpetrator could also not be established, thus they could not be included in the

analysis. This means than the rate of IF-S found in this study may possibly underestimate the true rate.

4.6.1 Availability of Data

Another study limitation was obtaining information from a secondary source. This resulted in missing data, as dockets were poorly kept and information in dockets was incomplete. The current police crime data base is not efficient and accessible creating problems in tracing cases and sourcing information from it. Police information systems are also unable to easily link cases, therefore a case might have been opened at a police station, but their crime data base is unable to make the connections when searching for details at another police station.

Missing dockets were another area of concern. It was claimed that dockets were not returned from court and the police information system was not always effective in tracking the location of dockets. The police were aware of these problems and the possible link to corruption within the police force has been raised.

4.6.2 Limitations on available information

Information from investigating officers, in particular on the history of intimate partner violence, was often limited. Previous history of intimate partner violence was not routinely collected by the investigating officer as it was not seen as an important part of the investigation. The attitudes of the investigating officer

towards the crime influence this as often in the interview the actions of the perpetrators would be legitimized.

4.6.3 Sample Size

This analysis was a sub-analysis of a broader study on intimate femicide. The sample size for IF-S (n=261 weighted) was thus relatively small and would have reduced the precision of estimates.

4.7 Conclusion & Recommendations

This dissertation is the first to describe the pattern of intimate femicide-suicide and estimated incidence rates for intimate femicide-suicide in South Africa. This is based on data collected for a study that had the objective of exploring the phenomenon of intimate femicide. These estimates are the first for a developing country.

This study found that the rates of IF-S (1.7/100 000 women 14 years and older) far exceed reported rates for other countries. This excessive rate can only be explained by considering the levels of intimate partner violence combined with the overall violence experienced in South Africa. These high rates of intimate femicide and intimate femciide-suicide should be viewed as an indicator of the level of intimate partner violence experienced in communities. It is therefore important to consider the public health impact of intimate femicide by considering the premature mortality burden this form of violence holds for communities.

The estimated IF-S rate indicates that the burden of premature mortality resulting from intimate partner violence is substantial for South African women. It is therefore important for service providers to understand the risks faced by women in violent relationships. Service providers therefore have a very important role to play in identifying women who are possibly at risk of being killed by an intimate partner and to assist such women to develop appropriate safety plans.

This study, importantly, starts to identify the links between the pattern of IF-S and the social context of the perpetrator. The logistic regression model suggests that White perpetrators, professionals or white-collared workers, and those who own a legal gun are more likely to commit suicide after killing their intimate partner. This would suggest that legal access to guns plays a significant role in the risks for IF-S. While the race of the perpetrator and his employment category may be linked to the social context of the perpetrator where IF would result in negative sanctions from his community. Committing suicide could be his way of escaping from possible negative consequences. Qualitative research with proxy informants (those close to the couple) may be useful to understand the circumstances leading to such a double tragedy.

This study has identified a number of flaws in the current medico-legal system and the South African Police Service. Their systems are not effective in ensuring that all unnatural deaths are followed-up by a police investigation. These weaknesses impact on our ability to conduct research and to monitor trends in

intimate femicide and IF-S. Although legislation exists to govern the management of such cases, it is only as effective as the systems that enable its effective implementation. This highlights the need for an accessible crime data base which will allow for centralized data collation. Such a data base can facilitate the surveillance of such cases in order to monitor their management and outcome.

Lastly it is important to identify possible IF-S before such premature deaths occur. Service providers, in particular mental health professionals have an important role to play in accessing the possible danger of suicide when they counsel men. In particular suspected or confirmed abusers who are depressed and show signs of suicidal ideation, in the context of separation, are at significant risk. It is critical that service providers understand the risks facing both men and women and integrate these factors into their assessments thereby enhancing the safety of women.

Intimate femicide is thus the most extreme form of intimate partner violence and should be considered as one of the most serious crimes against women. This offense is deeply rooted in the gendered relationships which perpetuate intimate partner violence. To address intimate femicide effectively suggests that we address the unequal power relations between men and women within our society. It is only once women are granted control over their own lives and the value of women's lives are appreciated by society that we will achieve a shift in the pattern of intimate partner violence.

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Addendum One

List for Mortuaries

Large

1.	Johannesburg	(1- 200)
2.	Germiston	(201- 450)
3.	Scottsburgh	(450-550)
4.	Chatsworth	(551-600)
5.	Pheonix	(600 – 800)
6.	Salt River	(801 – 1000)
7.	Bloemfontein	(1001 – 1100)
8.	East London	(1101-1200)

Medium

9.	Carltonville	(1201-1250)
10.	Camperdown	(1251-1300)
11.	Nongoma	(1301-1350)
12.	Stellenbosch	(1351-1400)
13.	Louis le Grange	(1401-1450)

Small

14.	Kokstad	(1451-1500)
15.	Beaufort West	(1501-1550)
16.	Montague	(1551-1600)
17.	Phuthaditjaba	(1601-1650)
18.	Nylstroom	(1651-1700)
19.	Cofinvaba	(1701-1750)
20.	Lusikiki	(1751-1800)
21.	Mt Frere	(1801-1850)
22.	Zeerust	(1851-1900)
23.	Grobersdal	(1901-1950)
24.	Middelburg	(1951-2000)
25.	Hartswater	(2000-2050)

Addendum Two

FEMALE HOMICIDE STUDY DATA CAPTURE SHEETS

CASE INFORMATION

Research Study Number _____

Mortuary Number _____

PM Number _____

Police case number _____

CASE FOLLOW-UP INFORMATION:

Police station _____

Investigating officer _____

Phone number of Investigating Officer _____

Court in which matter was heard _____

Mortuary data sheet

1. Date of autopsy : _____(yyyy-mm-dd)
2. Date of death: _____(yyyy-mm-dd)
3. Time of death: (00h00) _____
4. Day of the week of death:

1=Monday 2=Tuesday 3=Wednesday
4=Thursday 5=Friday 6=Saturday 7=Sunday

5. Name of pathologist: _____
6. Gender of pathologist

1	Female
2	Male

7. Age of victim _____if known
8. Estimate of age of victim _____if unknown
9. Race of victim

1	African
2	Coloured
3	White
4	Indian
5	Unknown

10. Blood Alcohol level taken

1	Yes
2	No
3	Unknown

11. Alcohol Level _____ g%
12. Missing Alcohol level

1	Yes
2	No

13. Missing Police Case Number

1	Yes
2	No

14. Missing Police Docket

1	Yes
2	No

Investigation Officer Data Sheet

Research Study Number

Police Case Number

13. Source of Information:

1	Primary Source
2	Secondary Source
3	Record Review

14. Location of docket:

1	Investigating Officer
2	Court / Inquest
3	Archives
4	DPP
5	ICD
6	Unknown

15. Where was the matter heard?

1	Matter was not heard
2	Regional Court
3	High Court

16. Occupation of Victim

1	Unemployed / homemaker
2	Professional: nurse, doctor, teacher, lawyer, accountant, social worker, pharmacist etc....
3	White collar: secretary, office or bank worker, sales person,
4	Blue collar: factory worker, waitress, employed in a shop, etc...
5	Sex worker
6	Domestic work /gardening /cooking
7	Selling/trading or making/growing things to sell
8	Farm worker
9	Student (school/college)
10	Security industry: police, armed forced, security guard
11	Street person
12	Unknown
13	Other (please specify)

17. Type of dwelling in which the victim lived?

1	Flat/ Townhouse	4	Hostel	7	Unknown
2	House	5	Shack/ One Roomed Housing		
3	Hotel/ Boarding House	6	Homeless		

18. Was the victim suspected of having at any stage been involved in trading sex for money?

1	Yes

2	No
3	Unknown

19. Where was the victim last seen:

1	Home
2	Work
3	Walking home
4	Bar / shebeen
5	Street
6	Park/ open ground
7	With friends
8	Other (specify)

20. Scene of injury:

1	Other Private House/ Yard	13	Medical Services area
2	Victim's Home Formal	14	Industrial / Construction area
3	Victim's Home Informal	15	Farm/ Primary Production area
4	Perpertrator's home formal	16	Sea/ lake/ dam/ beach
5	Perpertrator's home informal	17	Open land, urban
6	Residential institution	18	Countryside
7	Bar/ Shebeen/ N'club/ Disco	19	Railway line/ Station
8	Amusement /Park/Sports Area	20	Empty Building
9	Urban Public Road	21	Victim's Workplace
10	Country Public Road	22	In custody (state/private)
11	Shop/ Bank/ Retail area	23	Place Unknown
12	School/ Educational area	24	Other (specify)

21. Name of town/village/township or district of injury: _____

22. Place of injury was:

1	Major urban centre/provincial capital
2	Small town or "township in the countryside"
3	Rural area/village
4	Commercial farming area
5	Unknown

23. Relationship of victim to place where she was found:

1	Lived for more than 3 months in the same town/ area	4	In area for work/ shopping or entertainment purposes
2	Recently came to stay in tone/ area	5	Not previously known to the area
3	Passing through/ visiting	6	Unknown

24. Was more than one victim involved?

1	Yes
2	No

25 a. If yes, number of victims injured____

b. Number of victims who died___

26. Who were these other victims?

_____

27. Was it a family murder?

1	Yes
2	No

28. Did the perpetrator commit suicide?

1	Yes
2	No

Perpetrator Data

29. Perpetrator of crime is:

1	Known
2	Suspected
3	Unknown

30. Relationship of known/suspected perpetrator to victim:

1	Husband (any legal marriage or completed lobola)
2	Ex-husband
3	Cohabiting boyfriend (partial lobola or no marriage)
4	Ex-cohabiting boyfriend (partial lobola or no marriage)
5	Boyfriend
6	Ex-boyfreind
7	Same Sex Partner
8	Rejected man proposing a relationship
9	Relative _____(specify)
10	Friend/aquintance/in-law
11	Person known by sight
12	Stranger
13	Female perpetrator romantically involved or previously with current or ex-husband/boyfreind of victim
14	Unknown
15	Other (Please specify)

31. Gender of perpetrator:

1	Male
2	Female
3	Unknown

32. Age of perpetrator

1	Known
2	Estimated
3	Unknown

33. Age : _____

34. Race of perpetrator

1	African
2	Coloured
3	White
4	Indian
5	Unknown

35. Occupation of perpetrator:

1	Unemployed	9	Taxi owner/ driver or bus driver
2	Professional: nurse, doctor, teacher, lawyer, accountant, Social worker, pharmacist, engineer etc..	10	Selling/ trading or making/ growing things to sell
3	White collar: secretary, office or bank worker, sales Person, messenger etc....	11	Farm Worker
4	Blue Collar: factory worker, builder, waiter, employed in a Shop, municipal worker, postman etc...	12	Student
5	Security Industry: Police	13	Farm Worker
6	Security Industry: Armed Forces	14	Street Person
7	Security Industry: Private	15	Unknown
8	Domestic Worker/ gardening/ driver	16	Other (specify)

36. Was more than one person known or suspected to have perpetrated the injuries?

1	Yes
2	No
3	Unknown

37. If yes, how many? _____

38. If more than one, was this perpetrator thought to be the main perpetrator?

1	Yes
2	No
3	All perpetrators equally important

39. Was the perpetrator known to drink heavily?

1	Yes
2	No
3	Unknown

40. Was the perpetrator known to use drugs?

1	Yes
2	No
3	Unknown

41. Did he own one or more legal guns?

1	Yes
2	No
3	Unknown

42. Did he own one or more illegal guns?

1	Yes
2	No
3	Unknown

43. Type of Intentional Violence

1	Interpersonal
2	Legal Intervention
3	Gang/ Syndicate
4	War/ Civil insurrection
5	Unspecified
6	Other

44. Did death occur in the context of another crime?

1	Yes
2	No
3	Unknown

45. Specify the context of the "other" crime

1	Robbery
2	Housebreaking
3	Hijacking
4	Taxi Violence
5	Other (specify)

Data on the victim perpetrator relationship if the perpetrator was a current or ex-husband or boyfriend or rejected lover of the victim (i.e. intimate)

46. Was the perpetrator known to have threatened to harm the children or another family member if the victim left or did not come back?

1	Yes
2	No
3	Unknown

47. Was the perpetrator known to have threatened to kill the victim if she left or did not come back?

1	Yes
2	No
3	Unknown

48. Had the perpetrator ever been physically violent towards the victim?

1	Yes
2	No
3	Unknown

49. Did the victim ever indicate that the perpetrator been sexually violent towards her (e.g by telling someone or laying a charge)

1	Yes
2	No
3	Unknown

50. Had she ever previously reported the perpetrator to the police?

1	Yes
2	No
3	Unknown

51. Had she ever previously applied for a protection order or injunction?

1	Yes
2	No
3	Unknown

52. If yes, did she have a PO at the time of the murder?

1	Yes
2	No
3	Unknown

53. Had the police ever been called out to her home because of fighting between the perpetrator and victim?

1	Yes
2	No
3	Unknown

54. Had the perpetrator ever previously been arrested for assault on the victim or threats?

1	Yes
2	No
3	Unknown

55. Has there been a previous charge between the victim and perpetrator?

1	Yes
2	No
3	Unknown

56. What was the outcome of the case?

1	Out on bail
2	Case Withdrawn
3	Sentence Pending
4	Non-custodial Sentence
5	Time Served
6	Suspended Sentence
7	Other

57. Had the victim and perpetrator previously sought help for relationship problems from, for example a church minister or family or an NGO?

1	No known relationship problems
2	Unknown
3	Family
4	Religious leader
5	NGO
6	Social worker
7	Other person

58. Had the perpetrator previously injured the victim so that she had had medical treatment?

1	Yes
2	No
3	Unknown

LEGAL POSITION OF PERPETRATOR

59. This perpetrator has been:

1	Charged - awaiting trail
2	Charge Withdrawn – Witness disappeared / died
3	Trial in progress
4	Trial completed – convicted of murder
5	Trial completed – convicted of culpable homicide
6	Trial completed – convicted of lesser charge
7	Trial completed – acquitted - accident
8	Trial completed – acquitted -lack of evidence
9	Trail completed – acquitted -non-insane automatism
10	Trial completed – acquitted -self-defence
11	Trail completed – acquitted – temporary non-pathological criminal incapacity
12	Strongly suspected to have done it, not charged
13	Dead – Homicide
14	Dead – Suicide
15	Dead – accident
16	Dead – natural causes
17	Perpetrator never arrested
18	Perpetrator unknown

Perpetrator's Sentence

60. Jail Sentence

1	Yes
2	No

61. Jail Time

Years	Months

62. Community Service

1	Yes
2	No

63. Community Service Time

Years	Months

64. Suspended Sentence

1	Yes
2	No

65. Suspended Sentence time

Years	Months

66. Fine

1	Yes
2	No

67. Amount of Fine

Rands

68. Correctional Supervision

1	Yes
2	No

69 Correctional Supervision time served

Years	Months

70. Had this perpetrator been previously violent towards others:

1	Yes, awaiting trial
2	Yes, protection order granted
3	Yes, previous complaint to police
4	Yes, previous time served
5	Yes, bailed pending appeal
6	No
7	Unknown

71. If yes, who was he violent towards? _____

_____

72.Type of homicide

1	Female homicide
2	Intimate homicide
3	Unknown
4	Suspected Female Homicide
5	Suspected Intimate Homicide

73. If Intimate Homicide: Events leading to the murder

1	Female partner ending relationship
2	Argument over money
3	Argument over male partner's infidelity
4	Argument: reason unknown
5	Female partner did not obey male partner
6	Female partner refused to have sex with male partner
7	Female partner "nagging" male partner
8	Alleged infidelity of female partner
9	Female partner alleged to have insulted male partner's sexual prowess
10	Financial Gain
11	Accident
12	No explanation
13	Other (specify)

74. What was the status of the relationship at the time of the murder?

1	Couple living together
2	Couple divorced
3	Couple in the process of separating
4	Couple separated
5	Couple dating and living in separate households
6	Couple previously dated, never lived together
7	Other (specify)

75. Is separated / separating specify who initiated the separation

1	Woman
2	Man
3	Unknown

76. Was the crime scene visited by I/O?

1	Yes
2	No
3	Unknown

77. Was the crime scene visited by the pathologist?

1	Yes
2	No
3	Unknown

78. Were specimens collected from the mortuary?

1	Yes
2	No
3	Unknown

79. What was done with these specimens?

1	Evidence Room / SP 13
2	Lab
3	Sent via Post / Courier
4	Other (specify)

80. Was a weapon found?

1	Yes
2	No
3	Unknown

81. Type of weapon:

1	Knife	Yes	1	No	2
2	Gun	Yes	1	No	2
3	Blunt Object (specify)___	Yes	1	No	2
4	Other Sharp Object (specify)__	Yes	1	No	2
5	Ligature or object for strangulation (specify) ___	Yes	1	No	2
6	Other (specify) ___	Yes	1	No	2

82. Was other evidence found?

1	Yes
2	No

83. Type of other evidence:

1	Fingerprints	Yes	1	No	2
2	Footprints	Yes	1	No	2
3	Tyre tracks	Yes	1	No	2
4	Blood	Yes	1	No	2
5	Semen	Yes	1	No	2
6	Other body fluids	Yes	1	No	2
7	Foreign fibre	Yes	1	No	2
8	Foreign hair	Yes	1	No	2
9	Clothing	Yes	1	No	2
10	Other (specify)	Yes	1	No	2

84. Were crime scene photos taken:

1	Yes
2	No
3	Unknown

Pathology Data Sheet

Research Study Number _____

Mortuary Number _____

Pm Number _____

Police Case number _____

Pathology Data Sheet

Research Number _____

Mortuary Number _____

Pm Number _____

Police Case Number _____

85. Autopsy done:

Full	1	Partial	2	Ext. exam. only	3	None	4

86. Photos taken:

Yes	1	No	2

87. Suggestion of sexual assault:

Yes	1	No	2

88. Was the victim pregnant:

Yes	1	No	2	Unknown	3

89. Specimens taken:

Yes	1	No	2

90. Specify specimens taken

Taken:		YES	NO	Received by lab: YES	NO	DENATURED	INADEQUATE SPECIMEN
1	Blood Alcohol	1	2				
2	Eye fluid alcohol	1	2				
3	Grouping	1	2	1	2	3	4
4	Bullet Point	1	2	1	2		
5	Clothing	1	2	1	2		
6	Ligature	1	2	1	2		
7	Genital swab	1	2	1	2	3	4
8	Blood DNA	1	2	1	2	3	4
9	Control pubic hair	1	2	1	2	3	4
10	Comb	1	2	1	2		
11	Foreign hair	1	2	1	2	3	4
12	Foreign body fluid	1	2	1	2	3	4
13	Nail scrapings	1	2	1	2	3	4
14	Head Hair	1	2	1	2	3	4
15	Anal swab	1	2	1	2	3	4
16	Oral swab	1	2	1	2	3	4
17	Toxicology	1	2	1	2	3	4
18	Histology	1	2	1	2	3	4

91. Actual number of external injuries. _____

92. Sites of external injuries

		YES	NO
1	Head/face	1	2
2	Neck	1	2
3	Thorax	1	2
4	Abdomen,lower back	1	2
5	Pelvis, buttocks	1	2

		YES	NO
6	Upper limbs	1	2
7	Lowe limbs	1	2
8	Genitalia	1	2
9	Anal region	1	2
10	Unspecified	1	2

93. Actual number of internal injuries. _____

94. Sites of internal injuries

		YES	NO
1	Head/face	1	2
2	Neck	1	2
3	Thorax	1	2
4	Abdomen, lower back	1	2
5	Pelvis, buttocks	1	2

		YES	NO
6	Upper limbs	1	2
7	Lowe limbs	1	2
8	Genitalia	1	2
9	Anal region	1	2
10	Unspecified	1	2

95. Multiple injury sites:

Yes	1	No	2

96. Head/Face Injury

Yes	1	No	2

97. Type of Head/face injuries

		YES	NO
1a	Abrasion Single	1	2
1b	Abrasion Multiple	1	2
2a	Contusion Single	1	2
2b	Contusion Multiple	1	2
3a	Laceration Single	1	2
3b	Laceration Multiple	1	2
4a	Superficial incised wound Single	1	2
4b	Superficial incised wound Multiple	1	2
5a	Penetrating incised wound Single	1	2
5b	Penetrating incised wound Multiple	1	2
6a	Gunshot wound Single	1	2
6b	Gunshot wound Multiple	1	2
7a	Fracture Single	1	2
7b	Fracture Multiple	1	2

		YES	NO
8a	Bite Single	1	2
8b	Bite Multiple	1	2
9	Subconjunctival/scleral haemorrahages	1	2
10a	Extradural Haem	1	2
10b	Subdural Haem	1	2
10c	Subarachnoid Heam	1	2
10d	Intracranial Heam.	1	2
11a	Cerebral Contusion	1	2
11b	Cerebral swelling	1	2
11d	Cerebral Haematoma	1	2
11e	Cerebral Laceration	1	2
11f	Cerebral GSW	1	2
12	Cerebral PIW	1	2
13	Other intracranial injuries	1	2

98. Neck Injury

Yes	1	No	2

99. Type of neck injuries:

		YES	NO
1a	Abrasion Single	1	2
1b	Abrasion Multiple	1	2
2a	Contusion Single	1	2
2b	Contusion Multiple	1	2
3a	Laceration Single	1	2
3b	Laceration Multiple	1	2
4a	Superficial incised wound Single	1	2
4b	Superficial incised wound Multiple	1	2
5a	Penetrating incised wound Single	1	2
5b	Penetrating incised wound Multiple	1	2
6a	Gunshot wound Single	1	2
6b	Gunshot wound multiple	1	2
7a	Fractured vertebra single	1	2
7b	Fractured vertebra multiple	1	2

		YES	NO
8a	Bite Single	1	2
8b	Bite Multiple	1	2
9	Ligature abrasion	1	2
10	Finger/nail imprint contusions/abrasions	1	2
11	Fractured hyoid	1	2
12	Fractured thyroid cartilage	1	2
13	Jugular vein injury	1	2
14	Carotid injury	1	2
15	Thyroid gland	1	2
16	Strap muscles	1	2
17	Tracheal	1	2
18	Bloodless dissect	1	2

100. Thorax Injury

Yes	1	No	2

101. Type of Thorax injuries

		YES	NO
1a	Abrasion Single	1	2
1b	Abrasion Multiple	1	2
2a	Contusion Single	1	2
2b	Contusion Multiple	1	2
3a	Laceration Single	1	2
3b	Laceration Multiple	1	2
4a	Superficial incised wound Single	1	2
4b	Superficial incised wound Multiple	1	2
5a	Penetrating incised wound Single	1	2
5b	Penetrating incised wound Multiple	1	2
6a	Gunshot wound Single	1	2
6b	Gunshot wound Multiple	1	2
7a	Fracture Single ribs/ sternum /clavicle	1	2

		YES	NO
7b	Fracture Multiple ribs	1	2
8	Lung injury	1	2
9	Heart injury	1	2
10	Great vessel injury	1	2
11	Oesophageal injury	1	2
12	Tracheal injury	1	2
13	Diaphragm injury	1	2
14	Fluid	1	2
15	Spinal	1	2
16	Haemothorax	1	2
17	Haemopericardium	1	2
18	Haemoaspiration	1	2
19	FB aspiration	1	2

102. Abdomen, Lower back Injury

Yes	1	No	2

103. Type of abdomen and lower back injuries:

		YES	NO
1a	Abrasion Single	1	2
1b	Abrasion Multiple	1	2
2a	Contusion Single	1	2
2b	Contusion Multiple	1	2
3a	Laceration Single	1	2
3b	Laceration Multiple	1	2
4a	Superficial incised wound Single	1	2
4b	Superficial incised wound Multiple	1	2
5a	Penetrating incised wound Single	1	2
5b	Penetrating incised wound Multiple	1	2
6a	Gunshot wound Single	1	2
6b	Gunshot wound Multiple	1	2

		YES	NO
7a	Fracture Single (lumbar spine)	1	2
7b	Fracture Multiple (lumbar spine)	1	2
8	Liver injury: Specify_____	1	2
9	Spleen Injury: Specify_____	1	2
10	Pancreas injury	1	2
11	Stomach injury	1	2
12	Intestine/mesentery injury	1	
13	Adrenal injury	1	2
14	Kidney injury	1	2
15	Blood Vessels	1	2
16	Fluid:_____	1	2

104. Pelvis, buttocks

Yes	1	No	2

105. Type of pelvis and buttocks injuries

		YES	NO
1a	Abrasion Single	1	2
1b	Abrasion Multiple	1	2
2a	Contusion Single	1	2
2b	Contusion Multiple	1	2
3a	Laceration Single	1	2
3b	Laceration Multiple	1	2
4a	Superficial incised wound Single	1	2
4b	Superficial incised wound Multiple	1	2
5a	Penetrating incised wound Single	1	2

		YES	NO
5b	Penetrating incised wound Multiple	1	2
6a	Gunshot wound Single	1	2
6b	Gunshot wound Multiple	1	2
7a	Fracture Single	1	2
7b	Fracture Multiple	1	2
8a	Bite Single	1	2
8b	Bite Multiple	1	
9	Bladder Injury	1	2
10	Blood vessel	1	2

106. Upper limbs

Yes	1	No	2

107. Type of Upper limbs injuries

		YES	NO
1a	Abrasion Single	1	2
1b	Abrasion Multiple	1	2
2a	Contusion Single	1	2
2b	Contusion Multiple	1	2
3a	Laceration Single	1	2
3b	Laceration Multiple	1	2
4a	Superficial incised wound Single	1	2
4b	Superficial incised wound Multiple	1	2
5a	Penetrating incised wound Single	1	2

		YES	NO
5b	Penetrating incised wound Multiple	1	2
6a	Gunshot wound Single	1	2
6b	Gunshot wound Multiple	1	2
7a	Fracture Single	1	2
7b	Fracture Multiple	1	2
8a	Bite Single	1	2
8b	Bite Multiple	1	2
9	Vessel injury	1	2
10	Defence wounds	1	2

108 Lower limbs

Yes	1	No	2

109. Type of lower limbs injuries

		YES	NO
1a	Abrasion Single	1	2
1b	Abrasion Multiple	1	2
2a	Contusion Single	1	2
2b	Contusion Multiple	1	2
3a	Laceration Single	1	2
3b	Laceration Multiple	1	2
4a	Superficial incised wound Single	1	2
4b	Superficial incised wound Multiple	1	2
5a	Penetrating incised wound Single	1	2

		YES	NO
5b	Penetrating incised wound Multiple	1	2
6a	Gunshot wound Single	1	2
6b	Gunshot wound Multiple	1	2
7a	Fracture Single	1	2
7b	Fracture Multiple	1	2
8a	Bite Single	1	2
8b	Bite Multiple	1	2
9	Vessel injury	1	2

110. Vaginal examination done

Yes	1	No	2

111. Genitalia injury

Yes	1	No	2

112. Genitalia: External and internal injuries

		Abrasion		Contusion		Laceration		Penetrating	
		YES	NO	YES	NO	YES	NO	YES	NO
1	Pubic hair	1	2	1	2	1	2	1	2
2	Labia majora	1	2	1	2	1	2	1	2
3	Labia minora	1	2	1	2	1	2	1	2
4	Vestibule	1	2	1	2	1	2	1	2
5	Urethra	1	2	1	2	1	2	1	2
6	Clitoris	1	2	1	2	1	2	1	2
7	Hymen	1	2	1	2	1	2	1	2
8	Introitus	1	2	1	2	1	2	1	2
9	Post. Fourchette	1	2	1	2	1	2	1	2
10	Vagina	1	2	1	2	1	2	1	2

113. Anal examination done

Yes	1	No	2

114. Anal injury

Yes	1	No	2

115. Type of anal injuries

		YES	NO
1a	Abrasion Single	1	2
1b	Abrasion Multiple	1	2
2a	Contusion Single	1	2
2b	Contusion Multiple	1	2
3a	Laceration Single	1	2
3b	Laceration Multiple	1	2
4a	Superficial incised wound Single	1	2
4b	Superficial incised wound Multiple	1	2
5a	Penetrating incised wound Single	1	2

		YES	NO
5b	Penetrating incised wound Multiple	1	2
6a	Gunshot wound Single	1	2
6b	Gunshot wound Multiple	1	2
7a	Fracture Single	1	2
7b	Fracture Multiple	1	2
8a	Bite Single	1	2
8b	Bite Multiple	1	2
9	Foreign object (specify)	1	2

116. What proportion of locations of the lesions was precisely described?

1	0-25%	2	26-50%	3	51-75%	4	76-99%	5	100%

117. What proportion of the pathological descriptions was correct?

1	0-25%	2	26-50%	3	51-75%	4	76-99%	5	100%

118. W hat proportion of wounds had all their dimensions specified?

1	0-25%	2	26-50%	3	51-75%	4	76-99%	5	100%

119. Standard of PM report:

		Yes	No
1	Below adequate	1	2
2	Adequate	1	2
3	Superior	1	2

120 Primary medical cause of death

1	Single injury
2	Multiple injuries
3	Undetermined
4	Not injury related / natural

121. Mechanism of death

		Yes	NO
1	Gun shot	1	2
2	Stab	1	2
3	Blunt force	1	2
4	Strangled	1	2
5	Asphyxiated/smothered	1	2
6	Fire	1	2
7	Drowned	1	2
8	Other (please state)	1	2
9	Undetermined	1	2
10	Natural	1	2

Comments

COD as stated on PM report